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the Industry
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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Stories of the Week
Research Story
Philosophy of the Week
Air Conditioning and Efficiency
Promising New OEM Market
Boon to Fisherman
Motto of the Week
Confession of the Week
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Stories of the Week

"That roller towel in your washroom is filthy," sputtered a small-hotel registree. "Don't you know that roller towels were declared illegal in this state 20 years ago?"

"My friend," other-cheeked the proprietor. "that towel ain't illegal. It was there before the law was passed."

Ex-heavyweight champ Primo ("Da Preem") Carnera sued Columbia Pictures following release of the movie, "The Harder They Fall," which was based loosely on Carnera's boxing career.

Carnera demanded a million dollars "heart-balm" for defamation of his character and reputation by implication.

"Specifically, what did you object to in that movie, Primo?" probed a reporter.

"Couldn't say, pally. I don't see the picture yet."

At too long last two too-lively children fell asleep. Ruefully their mother surveyed her undone housework.

"Maybe it is better," she wearied "to have loved and lost."

"Hey, pop! Let mom drive. It's more exciting!"

Research Story

Heard a story the other day about a beverage manufacturer who hired an expensive research outfit to make a survey. Point of the project: to find out what color or colors people like in a beverage.

The money was appropriated, and teams of interviewers went to work out in the field.

At home the manufacturer mentioned his project rather proudly.

"Why, father, aren't you going to an awful lot of trouble and expense?" put in his nine-year-old daughter. "The answer is brown. Coffee is brown, tea is brown, chocolate is brown, and so are beer and highballs and Coca Cola."

Funny thing. Brown didn't even show up in the list of

(Concluded on Page 12, Col. 1)

Price Increases Speeded Up by Rise In Steel

DETROIT—Price increases on the industry's products, which were under way even before the settlement of the steel strike, are likely to be speeded up with the announcement of increases in steel prices, and a probable jump in aluminum prices.

Prices on most major lines of household refrigerators and freezers have been raised 3 to 5%. New home laundry equipment lines, now in the process of being introduced, show general price increases ranging up to 12%. Maytag increased the price 8% on two porcelain-tub wringer washers, the first increase on this type washer it has made in 5 years. Price increases have been announced on electric motors.

The scarcity of announcements of increases on air conditioning and commercial and industrial refrigeration equipment

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Typhoon Announces Price Rises Up to 5%, Effective Sept. 1

BROOKLYN—Selective price increases up to 5% on Typhoon air conditioning equipment, effective Sept. 1, 1956, have been announced by Mark E. Mooney, vice president of Typhoon Air Conditioning Co., Div. of Hupp Corp.

Mooney attributed these increases not only to increased

(Concluded on Page 33, Col. 1)

Los Angeles FHA Rulings Affect Home Cooling

LOS ANGELES—Two rulings affecting the installation of residential air conditioning equipment in the area within its jurisdiction have been made this season by the Los Angeles office of the Federal Housing Administration.

The most recent ruling requires the air conditioning equipment located outside the main dwelling shall be so placed as to detract as little as possible from the appearance of the dwelling and its surroundings and so as to create the least possible noise hazard for dwellings on adjacent properties.

It further requires that all plot plans submitted to the Los Angeles office for acceptance

(Concluded on Back Page, Col. 2)

G-E Will License Others To Use Magnetic Door

LOUISVILLE, Ky.—The General Electric Co. has offered to license other manufacturers to make its magnetic safety door for refrigerators.

W. M. Timmerman, general manager of the company's household refrigerator department, made the announcement following signature by President Eisenhower of a law requiring manufacturers to equip refrigerator doors with safety closing

(Concluded on Back Page, Col. 1)

Air Cooled Big Top Puts Supermarket Back In Business 8 Days After Fire

SHOPPERS at Grand Union's temporary circus tent supermarket were cooled by Carrier units rushed in to aid in making the interim retail outlet comfortable after the regular store was burned out.

E. PATERSON, N. J.—Only eight days after a fire destroyed the Grand Union Co.'s supermarket here, the store was open for business again—this time under three large circus tents set up in the parking lot across the street.

What's more, the 28,600-sq. ft. canvas supermarket was air conditioned!

The estimated 15,000 customers that shopped under the "big top" on opening day also found 42 refrigerated cases displaying meats and perishables.

The "circus tent" store could not have gone into successful operation without the type of equipment and technical assistance afforded by the air conditioning and commercial refrigeration industry.

Other merchandise was displayed on 400 ft. of prefabri-

(Concluded on Page 30, Col. 1)

Big Buildings Turn To Cooling

Trane Study Shows Growth by Areas

LA CROSSE, Wis.—A nationwide survey just completed by Trane Co. notes a definite trend toward air conditioning of U. S. factories for employe comfort and efficiency, D. C. Minard, president, reported recently.

This is distinguished from air conditioning for climatic control necessary for many industrial processes, he said.

In the survey, leading architects and consulting engineers were interviewed by a cross-section of the company's 90 sales offices across the nation.

Noting that contract awards for U. S. industrial construction in the first half of this year were up 29% over corresponding figures for 1955, Minard said:

"Leading architects and engineers tell us that industrial air conditioning for employe comfort is developing faster than anyone thought it would.

"It seems fair to say that the economy of the country is entering a new kind of expansion. This is a stage of building not only for increased capacity but for modern industrial environment which will cut costs."

Minard said the trend toward factory air conditioning is rapid especially in the South, where some consulting engineers have estimated that as many as 75% of new factories—and 50% of all factories—will be air conditioned for employe comfort by 1960. They estimate that 90% of factories will be so equipped by 1970.

But the trend is spreading also to the North—particularly

(Concluded on Page 2, Col. 1)

M-H Gives Optimistic Picture

By C. Dale Mericle

MINNEAPOLIS — "It is inevitable that every major office building in the country will be completely air conditioned during the next 10 years," contends John E. Haines, vice president in charge of Commercial Div., Minneapolis-Honeywell Regulator Co.

This prediction was made at a press conference where the company announced two new developments aimed at the office building market as well as the expanding potential for air conditioning in hospitals, schools, and industrial plants—an automatic air blender "valve" for double-duct high velocity systems and its "Supervisory Data-Center" for the remote operation and control of large installations.

The air blender valve, used in conjunction with a Honeywell "Round" room thermostats, is claimed to provide full control over space temperature without variations in system air velocities. It also permits the system to be balanced, the company says, merely by adjusting dials on the individual blenders as they are installed.

Pressure of the conditioned air itself positions the valve to mix required proportions of cold and hot air, the only external control connection being a "bleed" line to the room thermostat, Minneapolis-Honeywell explains.

"Cost of the air blender valve, depending upon the details of the installation, will be the same or lower than conventional pneumatic or electronic

(Concluded on Page 8, Col. 1)

Airtemp To Boost Conditioner Output

DAYTON — Airtemp Div., Chrysler Corp., is enlarging its air conditioner production facilities with the addition of a new $1,500,000 machine line.

The line, expected to be in operation the latter part of August, will be located in Airtemp Building 40. A special reinforced foundation for the

(Concluded on Back Page, Col. 1)

R.C. Hodapp Appointed Betz Sales Manager

DETROIT — R. C. Aylward, general sales manager of Bohn Aluminum & Brass Corp. recently announced the promotion of Robert C. Hodapp to the position of sales manager of the Betz Div.

Hodapp formerly was sales engineer of Bohn's Betz Div. Hodapp is a graduate of Purdue

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Servicing Weathertron Heat Pumps 28

Factory Air Conditioning Survey--

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in factories involving high skills, like work in electronics.

Factors in the trend include competition for skilled help, the desire to maintain employe efficiency, and union pressure.

"Factory air conditioning increasingly is being accepted by practical businessmen who insist on getting their money's worth from any investment," Minard said.

"They realize there is sound financial return in reduction in absenteeism, and improvement in production efficiency.

"While the spread of factory air conditioning is helped by good economic conditions, the trend wouldn't necessarily slacken in the event of a slump.

"Manufacturers then install as many cost-saving devices as possible in order to keep their products profitable even at highly competitive prices."

In many instances, it was found, consulting engineers are recommending that new factory buildings be constructed with air conditioning or built to allow easy future installation.

One of the questions asked in the survey was: "What proportion of U. S. factories do you estimate will be air conditioned for comfort by 1960? 1970? 1980? Please split your predictions between new construction and the addition of air conditioning to existing buildings."

Representative answers are as follows, as reported by various offices after checking with leading consulting engineers and architects (answers were based on their own areas):

Dallas: 1960—75% of new factory buildings to be air conditioned for employe comfort, 50% of existing buildings; 1970—90% in both categories; 1980—above 95% in both categories.

Houston: 1960—50 to 75% in both categories; all present facilities not abandoned by 1970 to be air conditioned.

Detroit: 1960—7% of new factories, 3% of existing factories to be air conditioned; 1970—21 and 9%, respectively; 1980—60 and 30%, respectively.

St. Louis: 1970—25 and 10%; 1980—70 and 20%.

Cleveland: 1960—7 and 4%; 1970—20 and 15%; 1980—35 and 25%; for both new and existing factories making precision and technical equipment: 1960—25%, 1970—40%, 1980—75%.

New Orleans: 1960—50% in both categories; 1970—75% in both; 1980—100% in both.

Atlanta: 1960—40 and 10%; 1970—80 and 50%; 1980—95 and 80%.

San Francisco (where low summer and mild winter temperature was listed as a factor): 1960—3 and 6%; 1970—12 and 20%; 1980—25 and 30%.

Chicago: 3% by 1960, 15% by 1970, 35% by 1980, 90% of those figures in new building.

Consultants in the textile field estimated that 20% of space is air conditioned today as against 1% 10 years ago.

The Trane office at Greensboro, N. C., reported that almost complete air conditioning of textile and tobacco manufacturing areas will be finished by major manufacturers by 1970 and by smaller firms probably by 1980. Very little new construction in either industry will go up by 1960 which is not fully air conditioned, it was reported.

Other survey highlights from the reports by Trane field offices follow:

Dallas — quoting consulting engineer Sam Sirman: "Public demands and union demands will pressure building owners to provide air conditioned spaces."

Houston — quoting Bernard Johnson, of Bernard Johnson & Associates: "Air conditioning of factories in this area has not been purely for employe comfort but for the increased production obtained. . . . In the Houston area air conditioning is as much a part of life as heating is in the colder areas. It has been a long time since we have designed a heating system for future cooling.

(Also Houston) — quoting Dale S. Cooper of Dale S. Cooper & Associates: "The air conditioning of factories in this area is primarily for increased production and efficiency which results in profits to owner."

Boston — quoting Ambrose Burton, vice president in charge of construction, Cabot, Cabot & Forbes, industrial developers: "There is a trend toward air conditioning of factories for employe comfort, especially in research and development work.

"Present acute shortage of good help, scientific and skilled, makes those industries include air conditioning for comfort.

Detroit — Griffels & Vallet, architects and engineers, have been retained for a number of industrial installations air conditioned by Trane equipment.

St. Louis—Air conditioning produces more efficient production—experimental rooms, tool rooms, and final assembly areas, according to interviews, will be first to receive air conditioning.

Unions are constantly asking better working conditions, and consensus is that air conditioning will be in these demands.

New York City—Basic reason for industrial air conditioning is competition for help. This requires air conditioning for offices and technical help.

Air conditioning in manufacturing spaces solely for human comfort appears to be somewhat in the future.

Los Angeles—Many air conditioned factories listed. Trend is snow-balling as companies compete for personnel in critical labor market. Harold Cross, vice president, Union Bank, recommends to customers that they consider air conditioning.

Projected Growth of Air Conditioning by Areas

	1960		1970		1980	
	New	Old	New	Old	New	Old
Dallas	75%	50%	90%	90%	Above 95% in both	
Houston	50-75% in both types		All present facilities not abandoned by 1970 to be conditioned			
Detroit	7%	3%	21%	9%	60%	30%
St. Louis	No Estimate		25%	10%	70%	20%
Cleveland	7%	4%	20%	15%	35%	25%
For both new and existing factories manufacturing precision and technical equipment: 1960: 25%; 1970, 40%; 1980, 75%.						
New Orleans	50%	Close to 50%	75%	75%	100%	100%
Atlanta	40%	10%	80%	50%	95%	80%
San Francisco	3%	6%	12%	20%	25%	30%
Chicago: 3% by 1960, 15% by 1970, 35% by 1980, 90% of those figures in new construction.						

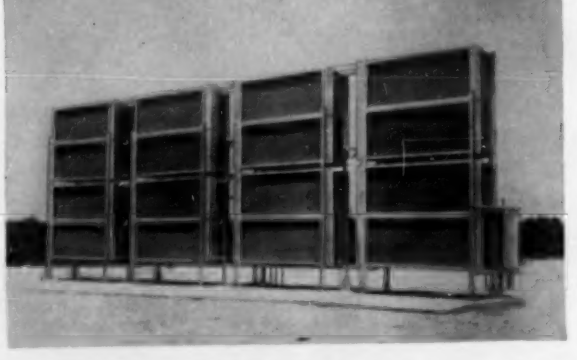
100 TON BARRIER

Crashing the 100 ton barrier

with KRAMER

UNICON

in semi-tropical climate



UNICON SUCCESSFULLY MET THE TEST THROUGH THE SEVERE SUMMER OF 1955

You, too, can crash the big tonnage barriers with UNICON, the industry's finest remote-type air-cooled condenser. Put Kramer's 18 years of "treasured know-how" in the proper use of air as a condenser coolant to work for you.

Photo of Kramer UNICONS mounted on roof of Handy-Andy Supermarket in San Antonio, Texas, used with 100 ton air conditioning system. Supplied through United Supply Co., of San Antonio and installed under the direction of Harold Vogt.

Write for Bulletin U-210-L

KRAMER

KRAMER TRENTON COMPANY
Trenton 5, New Jersey

100 TON BARRIER

For more information about products advertised on this page use Information Center, page 26.

NLRB Rules Frick Had No Control Over Sub-Contractor's Labor; Case Dismissed

WASHINGTON, D. C. — A general contractor who does not have control over the terms or conditions of employment of a sub-contractor's employes cannot be considered their employer.

On the basis of this dictum, plus the fact that the sub-contractor did insufficient interstate business to come within its jurisdiction, the National Labor Relations Board recently dismissed a jurisdictional dispute over the moving and setting up of air conditioning equipment.

Case Involved Installing A & P Air Conditioning

The case involved the installation of air conditioning units in a new A & P warehouse in Yeadon, Pa., near Philadelphia. The Frick Co., installing its own units, was acting as general contractor. It hired the Bolger-Parker Co. to furnish the necessary tools, equipment, and labor to haul the units to the job site and to place them on their foundations.

For this work, the sub-contractor, Bolger-Parker, used members of the riggers union, Local 161 of the International Association of Bridge, Structural, and Ornamental Iron Workers.

Frick Hired UA Workers

Frick, for the remaining work of installation, hired members of Local 420 of the United Association.

From the beginning of the work, testimony given to the NLRB indicated, the UA steamfitters claimed the work of moving the units from the warehouse loading dock to their final positions and setting them in place. The sub-contractor had, however, assigned that work to the riggers.

As a result of alleged pressure by the UA, Frick, with the acquiescence of Bolger-Parker, took the disputed work from the riggers and reassigned it to the steamfitters.

Riggers Charged Local 420 With Unfair Practice

The riggers protested and brought the UA before the NLRB charging Local 420 with an unfair labor practice. Local 420 denied this, claiming the work should have been assigned to its members in the first place, in line with previous agreements with the Frick Co.

After hearing the evidence, Trial Examiner William F. Scharnikow, found that the UA had violated the National Labor Relations Act by causing Frick and Bolger-Parker to transfer the disputed work from the riggers to the steamfitters, thereby causing the employers to discriminate against the riggers, in violation of the act.

He recommended that the UA be ordered to cease and desist. He further recommended that Local 420 be ordered to make up to the two displaced riggers the wages they lost because of the reassignment of work.

The Board, in disagreeing with these findings, asserted:

"As there is no evidence in the present case that Frick Co. was invested with any control over the terms or conditions of employment of Bolger-Parker's riggers to constitute Frick Co. an employer of those employes, we find that the Respondent (Local 420) did not cause Frick Co. to discriminate within the meaning of the Act."

Dallas Lets Contract for Cooling Old City Hall

DALLAS — The City Council has let contracts totaling $1,263,512 for air conditioning and remodeling the old City Hall building for police, courts, and city planning commission.

The general contract went to Jansen Construction Co. at $776,800. Matthews Engineering Co. got the $367,535 contract for air conditioning, ventilating, heating, and plumbing.

Cool Steers Gain Faster On Less Feed

IMPERIAL VALLEY, Calif— In this blistering area Federal researchers cooled one group of Hereford steers with an electric fan. The steers gained 2.3 lbs. a day.

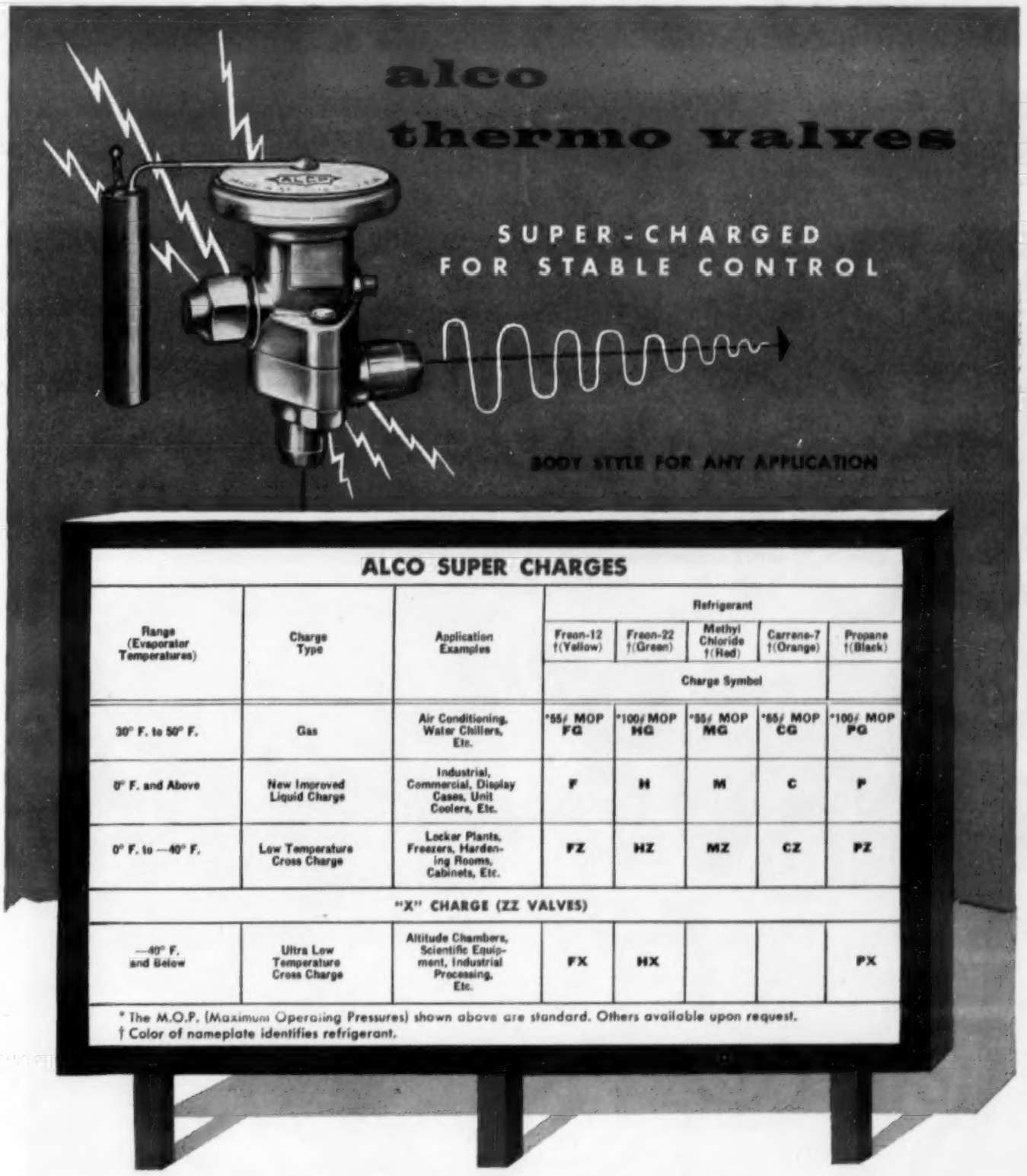
Unfanned cattle added only 1.4 lbs. a day and consumed more feed per lb. of gain.

The scientists failed to say if humans react the same.

John Wanamaker Branch To Be Air Conditioned

PHILADELPHIA — The Jenkintown, Pa. branch store of John Wanamaker, Inc., to be built on a 20-acre tract in the Baederwood section, will be entirely air conditioned, it was announced recently.

The two-level store will have an area of 165,000 sq. ft. and will include a penthouse for public dining, a beauty salon, and employe's facilities.



ALCO SUPER CHARGES

Range (Evaporator Temperatures)	Charge Type	Application Examples	Refrigerant: Freon-12 †(Yellow)	Freon-22 †(Green)	Methyl Chloride †(Red)	Carrene-7 †(Orange)	Propane †(Black)
			Charge Symbol				
30° F. to 50° F.	Gas	Air Conditioning, Water Chillers, Etc.	*55/ MOP FG	*100/ MOP HG	*55/ MOP MG	*55/ MOP CG	*100/ MOP PG
0° F. and Above	New Improved Liquid Charge	Industrial, Commercial, Display Cases, Unit Coolers, Etc.	F	H	M	C	P
0° F. to —40° F.	Low Temperature Cross Charge	Locker Plants, Freezers, Hardening Rooms, Cabinets, Etc.	FZ	HZ	MZ	CZ	PZ
"X" CHARGE (ZZ VALVES)							
—40° F. and Below	Ultra Low Temperature Cross Charge	Altitude Chambers, Scientific Equipment, Industrial Processing, Etc.	FX	HX			PX

* The M.O.P. (Maximum Operating Pressures) shown above are standard. Others available upon request.
† Color of nameplate identifies refrigerant.

...straight-through or angle connections...solder or SAE flare.
For all temperature ranges—all operating conditions.
Specify type desired when you order.

SEE YOUR ALCO WHOLESALER — ASK FOR BULLETIN 171-56

ALCO VALVE CO.
853 KINGSLAND AVE. • ST. LOUIS 5, MO.

Designers and Manufacturers of Thermostatic Expansion Valves; Evaporator Pressure Regulators; Solenoid Valves; Float Valves; Float Switches.

7085

E. A. Nash Heads Sales Of Servel Appliances

EVANSVILLE, Ind. — E. A. Nash was recently appointed sales manager of the home appliance division Servel, Inc., according to John H. Wall, executive vice president of the company and general manager of the division.

E. A. Nash

Nash was formerly merchandising manager and more recently director of distribution development.

In his new position, he will have charge of Servel's appliance sales organization, and will supervise the company's relations with appliance distributors and utility companies. He will also have over-all responsibility for such home office departments as advertising and sales promotion, marketing, sales analysis and control, and sales service.

The reorganization of Servel's home appliance setup was completed with the resignations of Richard S. Testut, former vice president in charge of home appliance sales, and Harry Bowser, former sales manager.

Wall indicated that since the engineering, production, and quality control areas of the business, to which he has devoted special attention, are now operating effectively under capable management, it is his intention to devote more attention to distribution. Present plans call for the elimination of the position of vice president in charge of home appliance sales which has been held by Testut.

Nash was formerly associated with the Airtemp Div. of Chrysler Corp. for a period of nine years.

VA Mortgage Covers Lewyt Built-In Wall Air Conditioner

LONG ISLAND CITY, N. Y. —Alex Lewyt, president of the Lewyt Air Conditioner Corp. here announced recently that the Lewyt built-in wall air conditioner may be included in V.A. mortgages. The units were accepted for FHA mortgages about a year ago.

The 2% down payment required from a veteran will enable him to invest about five dollars as his initial cost for a Lewyt unit, with the balance paid off over a time period measured by the life of the mortgage.

Lewyt said the V.A. decision will now allow builders to include Lewyt air conditioners as standard equipment, like bathroom fixtures.

President Signs Law Allowing Dealers To Sue Auto Makers for Bad Faith

WASHINGTON, D. C.—A bill giving automobile dealers the right to sue manufacturers for damages for failure to carry out franchise contracts in good faith was signed "reluctantly" by President Eisenhower.

The administration had opposed passage of the bill. In signing it, President Eisenhower expressed the opinion that it would be considered "an unwarranted intrusion by the Federal government in an area traditionally reserved to private enterprise."

The new law provides that damage suits must be brought within three years of the alleged act of bad faith. Suits can be based only on acts occurring after enactment of the law.

Lack of good faith is defined in the law as involving "coercion and intimidation or threats of coercion and intimidation." It does not include "recommendation, endorsement, exposition, persuasion, urging, or argument."

There is some speculation in business circles that this may lead to similar laws affecting other industries.

But President Eisenhower hoped the measure would be only temporarily needed to rectify a special situation in the auto industry.

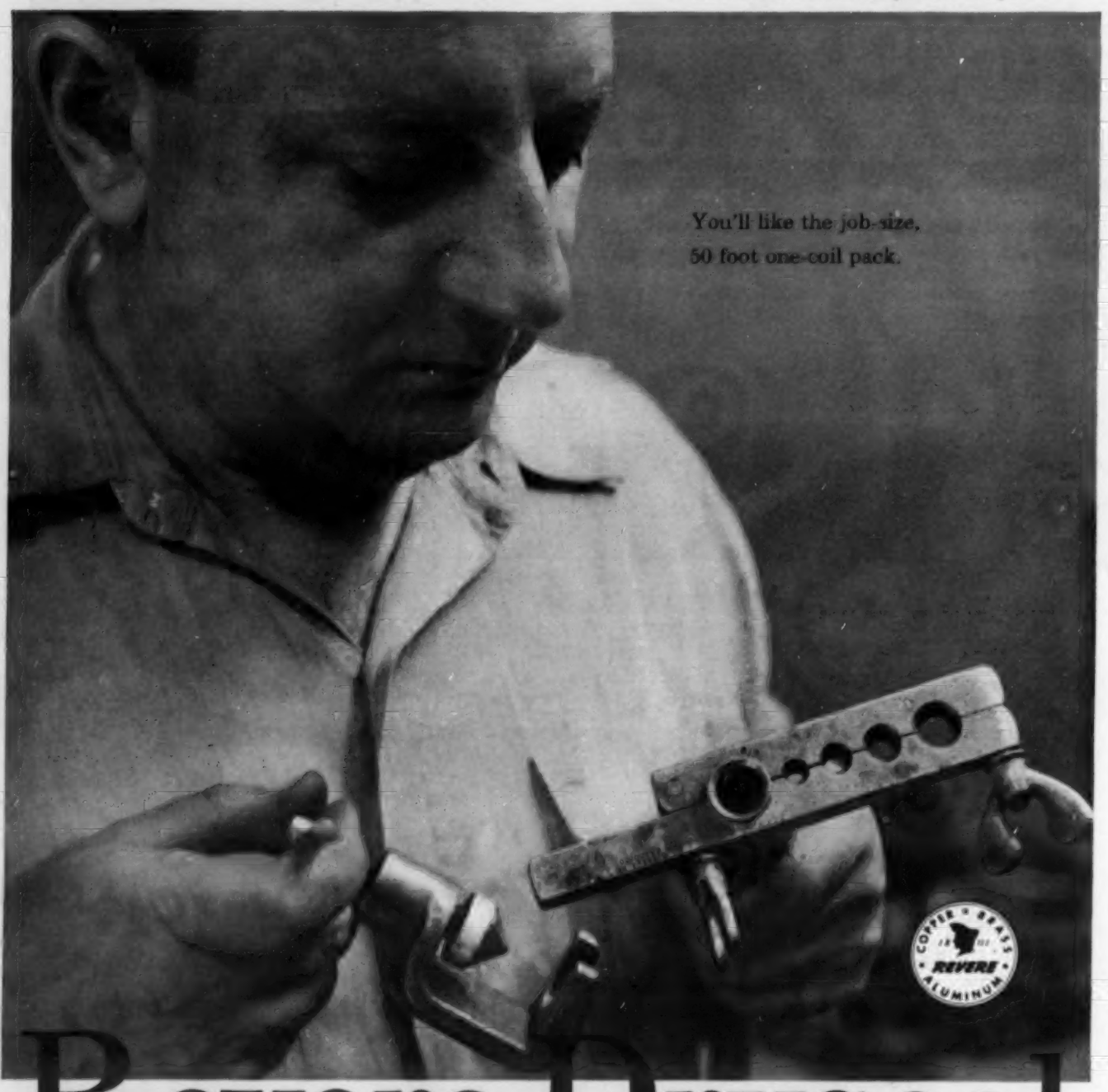
He directed Federal antitrust agencies to determine if these conditions continue to exist and to recommend "appropriate action by the next Congress."

At the same time, a special Federal court in Denver declared invalid a Colorado law passed just last year that would regulate the relationships between automobile manufacturers and their dealers.

General Motors Corp. had challenged the validity of the Colorado law.

Because DRYSEAL tube is dead-soft, flares are perfect every time. DRYSEAL bends finger-easy, too. Stays bone-dry, whistle-clean, mirror-smooth. The crimp is double . . . and *tube*-size to slip easily through fittings. Sizes 1/8" to 3/4". Use DRYSEAL on your next job.

Split-free flare



Revere Dryseal

COPPER REFRIGERATION TUBE

You'll find a Revere Distributor close at hand.

REVERE COPPER AND BRASS INCORPORATED, *founded in 1801 by Paul Revere*

Owens, Farrell Named To Posts by York

YORK, Pa. — The appointments of Todd L. Owens as manager, advertising and sales promotion; and James M. Farrell, sales manager, room air conditioners were announced recently by R. E. Cassatt, manager of sales, Commercial Div., York Corp., a subsidiary of Borg - Warner Corp.

T. L. Owens

J. M. Farrell

Owens comes to York from the Crosley Div. of Avco, where he was creative advertising manager for Crosley and Bendix products.

Before joining Crosley, he was advertising manager for the Free Sewing Machine Co. and APSCO Automatic Pencil Sharpener Co.

Farrell was with Crosley as merchandising manager for all Crosley lines, having started as field sales manager-electronics. Before that, he was active in the field of distribution having been sales manager for RCA Victor Distributing Corp., Buffalo, and sales manager for Western Merchandise Distributors, also of Buffalo.

Carrier Declares 60-Cent Dividend on Common Stock

SYRACUSE, N. Y. — Dividends on the common and preferred stocks of Carrier Corp. were declared here today by the board of directors.

Sixty cents per share on the common stock and 56¼ cents per share on the 4½% preferred stock ($50 par value) will be paid Aug. 31 to holders of record at the close of business on Aug. 15.

For more information about products advertised on this page use Information Center, page 26.

NARDA Proposes

Fewer Classified Phone Book Listings To Allow Wider Use of Display Ads

CHICAGO — A program to curtail excessive categories in classified telephone directories, and thus free a larger share of appliance and radio-television dealers' advertising budget for display advertisements in the directories, has been launched by the National Appliance and Radio-TV Dealers Association.

"We feel that much of the benefit dealers could derive from advertising expenditure in this effective medium is lost to them because of money dissipated into the prohibitive number of categories under which retailers must buy listings in order to have their products fully represented in many areas," NARDA President Don Gabbert said.

NARDA is proposing a basic group of categories under which services and products might be listed and recommending that others be cross-indexed to the most appropriate classification. This suggestion is being sent to all manufacturers in the industry and to NARDA's membership.

The basic list, which the association hopes will become the foundation for classified listings nationally is:

TEN PRODUCT LISTINGS

Electrical Appliances—Retail
Electrical Appliances — Mfg. & Wholesale
Gas Appliances—Retail
Gas Appliances — Mfg. & Wholesale
Air Conditioning—Retail
Air Conditioning — Mfg. & Wholesale
Vacuum Cleaners—Retail
Vacuum Cleaners — Mfg. & Wholesale
Television & Radio—Retail
Television & Radio—Mfg. & Wholesale

FIVE SERVICE LISTINGS

Electrical Appliances—Servicing
Gas Appliances—Servicing
Air Conditioning—Servicing
Vacuum Cleaners—Servicing
Television & Radio—Servicing

SEVEN CROSS REFERENCES

Refrigerators—See Electrical Appliances.
Washers—See Electric Appliances
Ranges—See Elec. Appliances or Gas Appliances
Freezers—See Elec. Appl. or Gas Appliances
Dryers, Clothes — See Elec. Appl. or Gas Appl.
Ironing Machines—see Elec. Appl.
TV Antenna—See TV Service.

Burnett Plumbing Moves

SPARTANBURG, S. C.—The Burnett Plumbing & Appliance Co. is in its air conditioned home at 765 N. Church St.

Dealers Usually Do Job Right

Hundreds of Improperly Installed Conditioners Seen Hazard In Miami

MIAMI, Fla. — E. C. Knox, head of the city building department, says "hundreds of dangerous air conditioning units are operating in Miami."

"The trouble mainly is with window units," Knox explained. "They've been installed at such a rapid rate my department can't hope to catch up with the backlog of inspections.

"Some units are about to fall out of high downtown office windows," he warned. "Two have toppled, but they didn't hit anybody."

Knox went on to say that more widespread are the dangers of faulty wiring, which could cause fires, and improper grounding, which could lead to electrocution.

Agreeing with Knox that many air conditioning units operating here are unsafe is J. M. Christian, promotional specialist for Florida Power & Light Co.

He said he blames most of the trouble on the phenomenal spurt in window unit sales. In the Greater Miami area, according to his figures, they are running better than 2,000 a month.

"A lot of window units are being plugged in on lighting circuits," Christian said, "and that is a dangerous situation."

Both Knox and Christian said that when a unit is installed by a dealer it usually is installed properly. They added that it's the "do-it-yourselfer" who causes the trouble. And the jack of all trades who will hire himself out to do the job cheaply and incorrectly.

In Miami, permits are supposed to be obtained for all installations. But these last two groups seldom bother to obtain permits, it was pointed out.

"Improperly wired units," Knox declared, "are not only dangerous. They do not function as efficiently as they should, and run up the cost of the electricity bill. Most units require a special circuit, of two separate wires."

Shreveport Firm Opens

SHREVEPORT, La. — Comfort Heating & Air-Conditioning, Inc., air conditioning and heating firm, has opened for business at 616 Lake St.

BANISH
STUCK PUMPS
WITH
PUMP-AID

THE GARMAN COMPANY
1253 Grover Rd., St. Louis 23, Mo.
Please send me Pump-Aid literature.
NAME.....
FIRM.....
ADDRESS.....
CITY.....ZONE....STATE.....

OVER 5 MILLION
Curtis prospects...
Your prospects
saw this full-color sales message
in
The Saturday Evening
POST

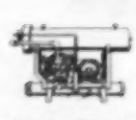
In a new, aggressive and *continuing* national advertising campaign to increase sales of Curtis equipment, this full-color sales message in the Post was driven home to more than **5** *million prospective buyers* of Curtis packaged air conditioning units.

If you are not a Curtis Dealer, and if you're qualified, *now* is the time to get started! You'll be selling the world's finest air conditioning equipment, *competitively* priced, and backed by a promotional-minded, on-the-go manufacturer with a solid 102 years of experience and skill.

Write today, and we'll show you how you can increase sales *and* profits with a complete, flexible line of Curtis Air Conditioning equipment.

Remember! you can count on our 102nd year Curtis

Packaged air cooled air conditioning units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Refrigeration Division
1912 Kienlen Ave., St. Louis 20, Mo.

CM-15

For more information about products advertised on this page use Information Center, page 26.

Builders and Manufacturers Discuss:

How To Convince Home Buyer Air Conditioning Adds More Value Than Cost of Equipment

By George M. Hanning

WASHINGTON, D. C.—Some pertinent comments on the problems and prospects of residential air conditioning today were brought forth at a recent conference on the subject sponsored by the National Association of Home Builders.

Air conditioning equipment manufacturers, home builders, and representatives of the Federal Housing Administration and the Veterans Administration gathered together to exchange views on the future of residential air conditioning in the light of recently published results on the Austin Village experiment.

"The problem we now have to solve," declared George S. Jones, executive secretary of the Air-Conditioning & Refrigeration Institute, "is to convince home buyers and builders that air conditioning adds more value to the home than the cost of the equipment involved."

"Consumers recognize the benefits of air conditioning," argued William Lake, residential air conditioning sales manager for Carrier Corp., "and will pay for them. The better living features of air conditioning, as shown in the Austin Village report, are reasons why houses today should be built around air conditioning."

Home Cooling Benefits All Who Are Concerned

Lake pointed out advantages home air conditioning offers to all parties involved. These include:

For the homeowner—a higher standard of living and a sounder investment in his house.

For the builder—a feature the public wants, it will sell houses faster, will build reputation as progressive builder, and will help him make more money.

For the architect—a challenge to design homes around air conditioning that will give better living features that you just can't get in any other kind of house.

For the realtor—it means new profits, new horizons, and help in fulfilling the motives for buying a home.

For the lender and guarantor—a safer investment in future value of the house, makes buyer a better risk if he buys air conditioning with initial purchase, and enables lender to retain profit on financing that might go elsewhere if air conditioning is installed later.

Home Buyer Described as Able To Afford Cooling

Harry Ward, supervisor of residential air conditioning merchandising for Frigidaire Div., General Motors Corp., reminded the group that the home buyer today can afford air conditioning.

Its initial cost is in line with what he would have to pay anyway for heating and operating costs are reasonable and economical for the home. He cited the results of the Austin Village experiment as proof.

Builder J. W. Underwood of Jackson, Miss. affirmed that builders should sell air conditioning because it sells more houses. "I think air conditioning is the greatest invention since the electric light in revolutionizing home living," he declared.

Richard Hughes, Pampa, Texas builder and chairman of the conference, asserted that down in Texas "we can't even get a maid any more without an air conditioned house."

Builder Shirly White of Austin, Texas, suggested that the industry construct another air conditioned village, such as the one in Austin. But this time, he added, put it in a metropolitan area so that a greater number of people can get an idea of what air conditioning has to offer.

Carl T. Mitnick, Merchantville, N. J. builder, admitted, "We need air conditioning in our business. Business is getting back to normal and that's not too good. Last time it was considered normal, I nearly starved to death.

"Somehow or other, the manufacturers are going to have to get the price down so we can put it in lower priced homes."

Hughes commented, "There is a trend away from air conditioning as far as small houses—those selling under $15,000—is concerned. I recently found only three builders in the Houston area still offering air conditioning in the lower priced home."

He charged the FHA and VA with inconsistency in valuating air conditioned homes and in qualifying prospective buyers.

Sees Air Conditioned Homes Penalized

"I do believe," he said, "that air conditioning comes in for a much greater penalty than it should."

He cited the following "rule of thumb" as used by FHA officials in the southwest for approving mortgage credit.

Housing expense here is defined as including principle plus interest, insurance and taxes, utilities, and maintenance.

In the lower income brackets, the rule runs, net effective income must be approximately four times the housing expense. In the higher income brackets (from $700 a month and up) net effective income must be five times the housing expense.

Allowable housing expense in the non-air conditioned home is considered to be $10 per $1,000 of mortgage debt. For the air conditioned home, this expense is considered to be $12.75 per $1,000 of mortgage debt.

This factor, he said, requires a prospective homeowner to have a much larger proportionate income in order to qualify as a purchaser of an air conditioned house. As a result, it eliminates many families of moderate income.

The differential in allowable housing expense, he added, is

(Concluded on next page)

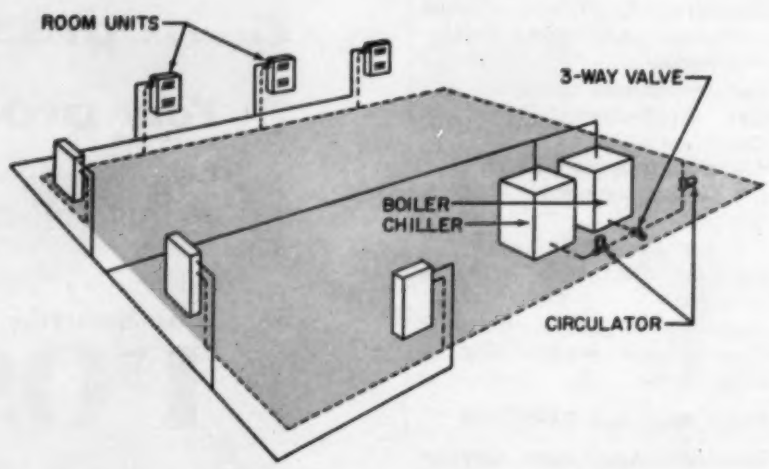
Another example of "Custom Control" air conditioning from Honeywell

New year-round control panel

Adaptable to any sequence your installation requires—

The W212 AG and AK controls:

- Cooling
- Heating
- Convector Fans
- 1 or 2 Circulators
- Automatic Change-over Valves



THE NEW W212 AG and AK single-stage control panels provide semiautomatic changeover between cooling and heating. A special feature is the heating relay, which completely isolates the heating controls from other low-voltage wiring. Therefore any standard heating system—whether it be oil, gas, or self-energized (Powerpile)—can be quickly and easily controlled without the need for a separate interposed relay or careful phasing of an external transformer.

Simply vary the external wiring, and this new flexible Honeywell Control Panel gives your customers the sequence of operations best suited to their needs.

Increase your profits with Honeywell controls. Get full information on the new W212 AG and AK panels and on our complete line of heating-cooling controls. Call your local Honeywell office. Or write, Honeywell, Dept. AN-8-189, Minneapolis 8, Minn.

Stock only one thermostat—combine it with one of two Honeywell Sub-Bases

One thermostat and two Honeywell Sub-Bases—that's all you stock to give your customers the *exact* switch and thermostat combination they want. The thermostat is the T87—the famous Honeywell Round. Two Sub-Bases are available, Q405A, Q405C.

All these advantages are found in the famous Honeywell Round:

- **Ultramodern,** Honeywell Round is world's largest selling thermostat.
- **Fast response.** Low-voltage design gives maximum sensitivity while reducing your wiring costs.
- **Heating and cooling anticipation.** Eliminates temperature lag on the beginning and end of the compressor cycle—maintains precise cooling levels.
- **Mercury switch.** Has an enclosed, dust-free switch that guarantees dependability.
- **Decorator feature.** Honeywell Round features the famous snap-off ring that can be painted to blend with any wall.

For more information about products advertised on this page use Information Center, page 26.

FHA, VA Call for More Information On Operating, Maintenance Costs

(Concluded from preceding page)

much greater than even the most reckless estimate of what it costs to operate and maintain an air conditioned home.

FHA Commissioner Norman Mason replied that "these gymnastics just mean that somebody in this industry has not been giving us the facts upon which we can base our conclusions."

He announced that he would set up an official committee of builders and air conditioner manufacturers to get the needed facts on operating costs, maintenance, and depreciation.

Thomas J. Sweeney of the Veterans Administration Loan Guaranty Service added, "I have never seen what is a reasonable cost of operation for a standard brand of air conditioner."

He added, "We don't intend to treat air conditioning as an appliance."

FHA Pledges Cooperation

Charles A. Bowser, assistant commissioner of technical standards for FHA, invited any industry association to cooperate in putting on an educational program for FHA field offices. "We will be glad to work with you on such a program," he added.

Commenting on the Austin Village report, Ralph Johnson, director of construction and the research institute for NAHB, noted that one of the high costs of installation was attributed to the electricians.

"This was caused by their unfamiliarity with the equipment and how to wire it," he explained. He urged that manufacturers make their wiring information more easily available.

GATHERED AROUND THE SQUARE in the National Housing Center, Washington, D. C., nearly 100 builders, air conditioning equipment manufacturers, and FHA and VA officials thrash out problems in residential air conditioning. At speaker's stand is Richard Hughes, conference chairman. The trio seated in front of Hughes are (l. to r.) Ralph Gonzalez of Airtemp, L. D. Nutter of General Electric, and Don Petrone of Typhoon. Trio to right are Harry Ward of Frigidaire, A. E. Meling of Carrier, and William Lake of Carrier. Generally, FHA and VA officials are at left, manufacturers and builders at right, with press in the foreground.

Notes Improvement Since Austin Village

"There has been some improvement since Austin Village," he said, "but there can be more."

Another result of Austin Village he mentioned was that a roof overhang of more than 40 in. is not economical for the builder to install. He suggested that where more shading is needed, a carport or some other means of shading be used.

Builder Harvey Meyerhoff of Baltimore commented that when building a house for air conditioning, he has found it a wise practice to always get the opinion of an engineer on whether or not the ducts are properly sized for cooling.

"I never take the heating contractor's word for it," he said, "particularly when the ducts are to be concealed."

Builder J. G. Powers of Tyler, Texas asked air conditioning equipment manufacturers for aid in getting utilities to cooperate in providing operating cost data on previously installed air conditioned homes.

"I have trouble getting such information from our utilities," he commented. "If we could get it, it would help to sell air conditioned homes."

George E. Bosch Joins Ingersoll

KALAMAZOO, Mich.—George E. Bosch has joined the sales staff of the Ingersoll Conditioned Air Div. of Borg-Warner Corp. here. He has charge of sales and product development for the air distribution and diffuser program.

G. E. Bosch

Prior to his present appointment, Bosch was a sales engineer in the Indianapolis area for the Hall-Neal Furnace Co.

for liquid cooling-heating!

Note these plus features of the W212

- **Available in two models**—the W212 AG available without Pressuretrol; model W212 AK with Pressuretrol.
- Can be used with manual valves.
- **Minimum maintenance**—sturdily built and scientifically engineered for long life, dependable performance. Guaranteed for one full year.
- Compact size.
- **Complete circuitry** within panel eliminates installation errors, permits any variations necessary.
- **Terminal connections** provided for accessory equipment.
- **Controls a complete range** of compressor sizes —up to 5 HP single phase and 10 HP three phase.

MINNEAPOLIS **Honeywell**

112 offices across the nation

Air Conditioning Controls

VIKING COPPER TUBE

see page 9

Air Blender, 'Supervisory DataCenter' Can Provide 'Automation' on Large Cooling Jobs

(Continued from Page 1)

systems," explained James S. Locke, division sales manager.

The "Supervisory DataCenter" development which centralizes controls for big systems usually represents an increase in the initial cost of air conditioning, but this development, Locke said, "is designed to do the same thing for both existing and new non-residential buildings that automation does for industry—cut operating costs and improve efficiency."

Essentially, the "DataCenter" combines remote temperature and start-stop controls for all the components of a big system including the compressor, pumps, fans, towers, etc., on panels which graphically depict the arrangement and functions of the components in addition to having the necessary instruments to show temperature readings, etc., from whatever spaces are desired. The panels are custom-made, so that type and number of controls, gauges, and instruments are virtually unlimited as to variety.

In discussing current trends, Haines emphasized that air conditioning not only provides comfort, but is a factor in improving employe efficiency, individual's health, and the learning rate of students.

At present, he said, "there is very little sound scientific data to prove" how much air conditioning does help, but he predicts that such data will be available "in the near future."

Besides forecasting that all major office buildings will be air conditioned in 10 years, Haines also made three other predictions:

1. "Today, more than half of the hospitals in the country have air conditioning in some form in some area. Within a few years all modern hospitals will be completely air conditioned."

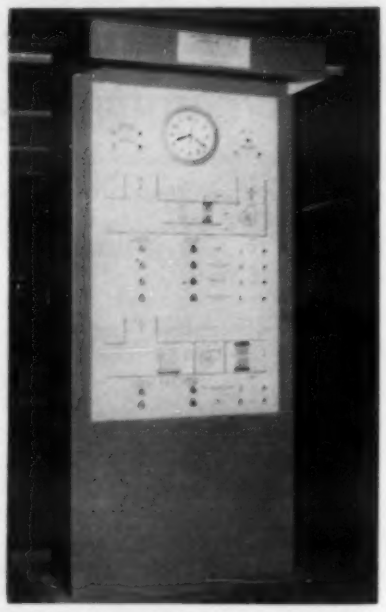
2. "I believe that we are going to see more air conditioning in schools as parents and the public appreciate the importance of air conditioning as a teaching aid and as they learn that air conditioning will add very little expense to the overall cost of education. Also, the trend is toward the year-round use of schools either as classrooms or for other community purposes."

3. "It is inevitable that a very large percentage of the modern production facilities in this country will be air conditioned within the next few years."

Air Blender Described

As reviewed by Louis F. Flagg, market manager, the new high velocity (4,000 to 8,000 f.p.m.) air blender unit consists of (1) a pair of valves, one for hot air, the other for cold air, in which balloon-like neoprene diaphragms perform all operating functions, (2) two new diaphragm type air flow regulators, and (3) a new Honeywell pneumatic thermostat.

With the blender's "dial balancing" feature, the total amount of air to be supplied to each room is pre-set in cubic feet per minute according to the design load requirements for the area, the company explains.



CENTRALIZED control of air conditioning systems as provided by Minneapolis-Honeywell's "Supervisory DataCenters" can be employed on systems such as this panel for Shreveport club which lets manager adjust system in evening after maintenance mechanic has left for the day.

AIR BLENDER developed by Minneapolis-Honeywell for high velocity (4,000 to 8,000 f.p.m.) dual duct air conditioning systems and actuated by air pressure in ducts is claimed to maintain constant air delivery at pre-set rate.

The hot air valve automatically controls the amount of heated air supplied according to demands from the thermostat. The cold air valve automatically adjusts total air flow to maintain the pre-set c.f.m. Inflation and deflation of the diaphragms in the two valves control the amount of air through the ducts.

The system is said to operate on the law of physics that a drop in pressure is a measure of flow. When the thermostat calls for cooling, the flow regulator on the hot duct valve automatically reduces the amount of heated air entering the system.

This reduces the total flow of air and changes the total pressure. The change is instantly detected by the flow regulator on the cold valve, which then admits enough additional cold air to maintain the pre-set total air flow, the company says.

As the addition of cooled air brings the temperature below the thermostat setting, the instrument opens the hot valve. This increases the total flow and raises the pressure. The increase is detected by the cold valve flow regulator which, in turn,

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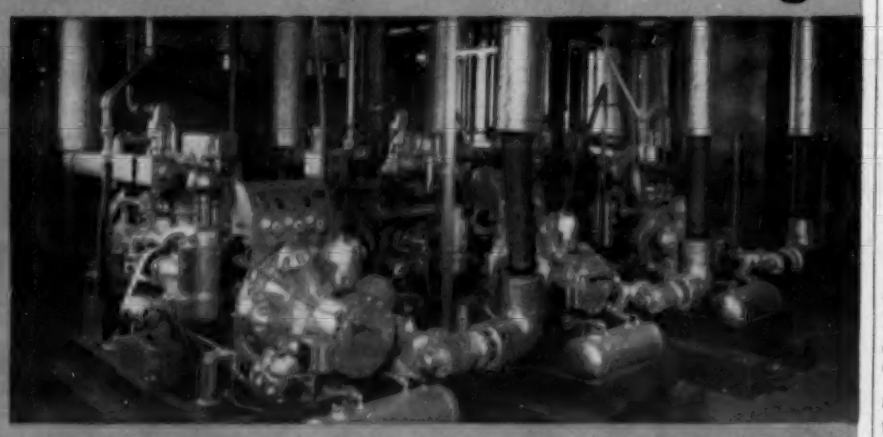
give your customers Ready-Power

NATURAL GAS air conditioning

economical
automatic
dependable



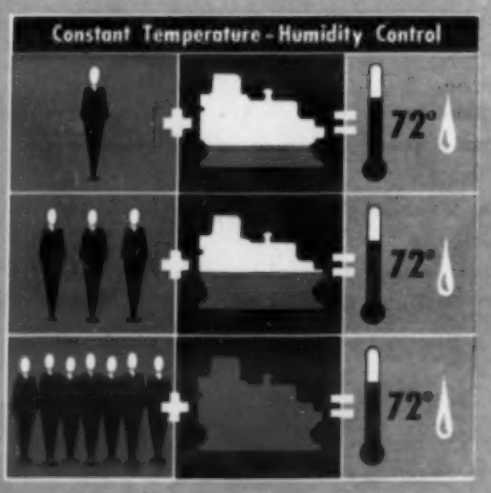
For Office Buildings | For Restaurants | For Churches | For Theaters

Call for Ready-Power Natural Gas Air Conditioning Units and give your customers the advantages of air conditioning at its best. Designed and engineered to operate efficiently on economical natural gas, Ready-Power Air Conditioning Units give controlled summer temperature and humidity at *lowest operating costs known.*

Ready-Power Units feature a unique system of capacity modulation which permits *continuous* operation of the compressor at variable speeds. Cooling rate and power requirements automatically adjust to changing load conditions. Temperature and humidity variations common to "on and off" systems are eliminated. Ideal for theaters, restaurants, motels, hospitals, churches and store and office buildings where latent and heavy sensible loads must be met.

Ready-Power Air Conditioning Units are available up to 76-ton capacity, and many multiple unit installations of more than 150-ton capacity have been operating for years. Units are designed to operate with chiller or direct expansion equipment. Pre-engineered Chiller Packages, available through Ready-Power, simplify and speed installation of complete air conditioning systems.

Complete information is available. Write for it.



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SAVES AS IT SERVES

THE READY-POWER CO.
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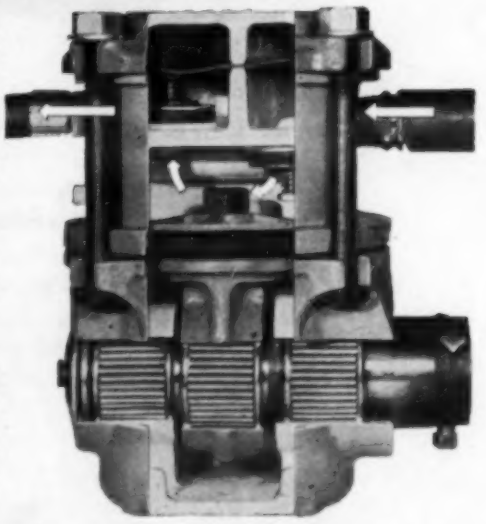
Manufacturers of Gas and Diesel Engine Driven Generators and Air Conditioning Units; Gas and Diesel Electric Power Units for Industrial Trucks.

Solve your service problems with the ACE Diaphragm Descaling Acid Pump.



- All parts in contact with descaling compounds are acid resistant . . . Neoprene diaphragms . . . nickel-iron pumping chamber. Stainless steel valve parts.
- Entire unit is portable . . . pump and motor mounted on sturdy base with convenient carrying handles.
- Manufactured and guaranteed by the makers of the *complete* line of Ace cooling tower circulating pumps . . . ¼ H.P. thru 7½ H.P.

Manufacturers representatives and distributor inquiries invited.

ACE PUMP CORPORATION
140 HERNANDO ST. • MEMPHIS, TENN.

For more information about products advertised on this page use Information Center, page 26.

New Equipment Designed To Speed Big Building Cooling Market

(Concluded from preceding page)

closes the cold duct and re-establishes the desired total flow.

Normally the system never requires re-balancing, Honeywell claims. However, if design load conditions are changed in any area, the total air flow can be changed and the system re-balanced by a simple adjustment of the total flow dial mounted near the unit and reached through an access door in the ceiling or wall. Re-balancing total flow in one area will not affect conditions in others areas in any way, the company claims.

The system can be used with ceiling, sidewall, or under-the-window air outlets and in larger work spaces several blender units can be controlled from one thermostat.

According to Honeywell engineers, the same principle of operation can also be applied to the control of single-duct, high-velocity cooling systems.

The valves used in the new system are designated the V0300A for the hot air duct unit and the V0300B for the cold. The thermostat — designated the T0300B — features Honeywell's round styling and decorator cover which can be removed and painted or papered to harmonize with the interior decorating scheme of the room.

DataCenter Is New Concept

The other development announced by Honeywell at this time — the Supervisory DataCenter—is not essentially a new product but rather a new concept in centralized control, emphasized C. M. Sanders and Edward J. Roach.

With the exception of color-coded diagrams in plastic which make the relationship between the adjustments and the system easier to understand, the components which go into such panels are mostly standard items.

By bringing all the controls to a central panel, however, considerable savings in operating and maintenance labor can be achieved, especially in large systems, besides providing better air conditioning. Latter is possible, Honeywell claims, by permitting quick detection and correction of faulty operation, readjustment of temperature settings, etc., while shutting off equipment when not needed can reduce operating costs.

Although initial interest in DataCenters is primarily associated with large installations, the company cites an installation for the Shreveport Club in Shreveport, La.

"The club is a small one where the responsibility for operating the air conditioning system is shared by a maintenance mechanic and the club manager," Honeywell explains.

"The maintenance mechanic works regular hours, but during the evenings when the club is busiest, only the club manager is present. By pushing buttons he can start air conditioning units serving those areas that will be in use.

"The pilot lights show at all times which units are running. He can then adjust the temperature with knobs to suit the needs of the particular group.

"For example, if this should be a large, active group, the temperature may be reduced, but for a small, quiet gathering, a higher temperature might be desired."

DIAL adjustment of blender permits balancing as blender is installed according to design requirements. Dial is part of newly-designed flow regulator.

Still another control knob permits the manager to adjust ventilation to the requirements of the group using the rooms.

Over-all possibilities of this automation concept are somewhat startling, even Honeywell engineers confess. The usual logging of temperatures at regular intervals commonly done by operating engineers on large systems will be performed automatically in one such panel being produced.

AIR flow through blender is controlled by neoprene diaphragms which modulate from full open to full closed position in response to pneumatic room thermostat.

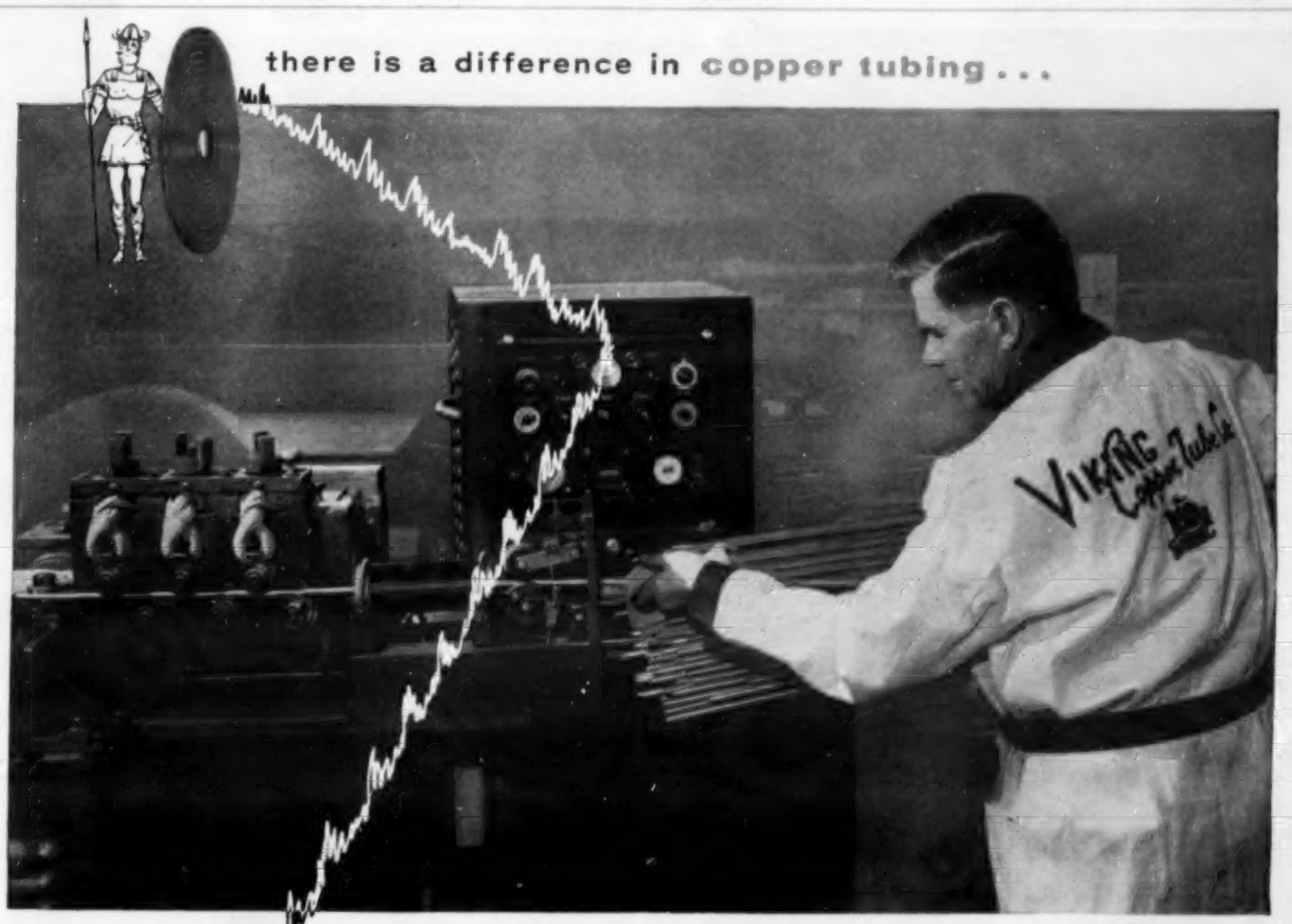
Temperatures will be automatically typed on an electric typewriter. If any temperature is out of its normal range, an alarm light will turn on and the temperature will be typed in red on the log sheet.

Hotel, Hospital Panel Now Being Designed

Another panel being designed for a hotel, the company reveals, will remotely control lights and temperature, provide morning calls, maid calls, message and mail signals, occupancy status, and fire warnings.

A "bedside control center" is also being developed for hospital use, Honeywell said. This would incorporate individual room temperature control, intercommunication between patient and nurse, switch control for motorized beds, switch control for drapery actuators, a radio selector switch, room and bed light control, and an oxygen outlet.

there is a difference in copper tubing . . .



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THE BRAIN THAT SCREAMS FOR QUALITY

In VIKING's ultra modern plant, an electronic "Brain" literally "screams" when defective tubing passes through its field. The minutest flaw or imperfection in the wall of the tubing causes the "Brain" to flash lights, ring bells and blow horns signalling the operator and automatically discarding the defective tubing.

This unique application of electronic science to the manufacture of VIKING copper tubing virtually assures trouble-free fabrication of the thinnest wall tubing — almost completely eliminating operational failures in tubing.

Because of the quality control practices, such as the electronic "Brain", employed by VIKING more and more manufacturers of air conditioning units and coils have made VIKING their principal source of supply . . . taking advantage of VIKING's "difference" in quality, uniformity and dependability of service.

VIKING copper tubing is the result of the combined efforts of skilled craftsmen seeking always to create a tubing that will do the job better, faster and at lowest cost.

VIKING COPPER TUBE CO.
CLEVELAND 10, OHIO

PRECISION DRAWN SEAMLESS COPPER AND ALUMINUM TUBING

EXTRA STRENGTH
The proper kind of strength and ductility is vital in tubing used for refrigeration and air conditioning purposes. Copper tube possesses these qualities to a far greater degree than other types of tubing. Its uniform temper assures trouble-free fabrication.

EXTRA FLEXIBILITY
Viking Copper Tube is soft and pliable, yet exceedingly rugged. It saves time and labor because it can be coiled, formed, flared and expanded quickly without danger of fracturing or splitting.

CLEAN AND DRY
Viking Copper Tube is triple-sealed at the ends, stays dry and absolutely dirt-free. The seal is made to pass through any opening large enough for the tube itself. It's clean . . . it's bright . . . it's dry!

PRESSTITE
Insulation Adhesives

- quick, permanent adhesion
- long-lasting high bond
- excellent resistance to temperature extremes
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See your wholesaler or WRITE

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For more information about products advertised on this page use Information Center, page 26.

How the Cincinnati Redlegs' Dugouts, and Press Box Were Cooled

36-Ft. Cold Air Curtain Encloses Both Dugouts To Shield Out Hot Air

CINCINNATI — Whether the Cincinnati Redlegs will continue to be one of the "hottest" teams on a major baseball diamond this year is still a matter for conjecture. You can be certain, however, that in the dugout they will be the coolest team. The reason—air conditioning!

Dugouts for both home and visiting team have been air conditioned, along with the press box, broadcasting booth, press room, and TV monitor room.

Because mid-summer temperatures in Cincinnati are among the highest in the league, the Crosley Field dugouts long had been considered uncomfortable. Actually, this players' area was always considerably hotter than the stands because it is protected from the sun only by a low flat roof and enclosed on three sides preventing circulation of air.

Thus, it is easy to understand why players who previously have sweltered in muggy misery welcome the opportunity to relax in cool comfort while awaiting their turns at bat. Likewise, newsmen and sportscasters who once "baked" in the 100° plus heat of the metal press box high atop the grandstand can now devote their full attention to the game instead of mopping perspiration and swallowing salt tablets.

5-HP. Frigidaire air-cooled condensing unit (CARW-500) in combination with a similar size coil and fan assembly (CBW-500) is the heart of the air conditioning system which cools the press box. Ductwork from the blower unit runs along the roof of the press box because the low ceiling did not permit inside installation. One hundred per cent fresh air is used in the system.

FRIGIDAIRE air conditioning system for the press box high atop the grandstand at the Cincinnati ball park has transformed the tunnel shaped room from a sweatbox into a comfortalbe place to work for newsmen covering Redleg games. Conditioned air is discharged into press box through semicircular ceiling diffusers.

First step in cooling the press box was enclosing it with a glass front, and insulating the room on the top, back, and sides.

Two-inch insulation was used for the ceiling and 1-in. material on the sides and rear wall. All of it was sealed with an aluminum vapor barrier, and covered with ⅛-in. tempered masonite to provide a smooth, hard surface on the interior. Special tempered glass, designed to withstand the impact of a baseball, was used in the front of the box.

A "tunnel-shaped" room about 6 ft. wide, 6 ft. high, and some 40 ft. long, the press box posed

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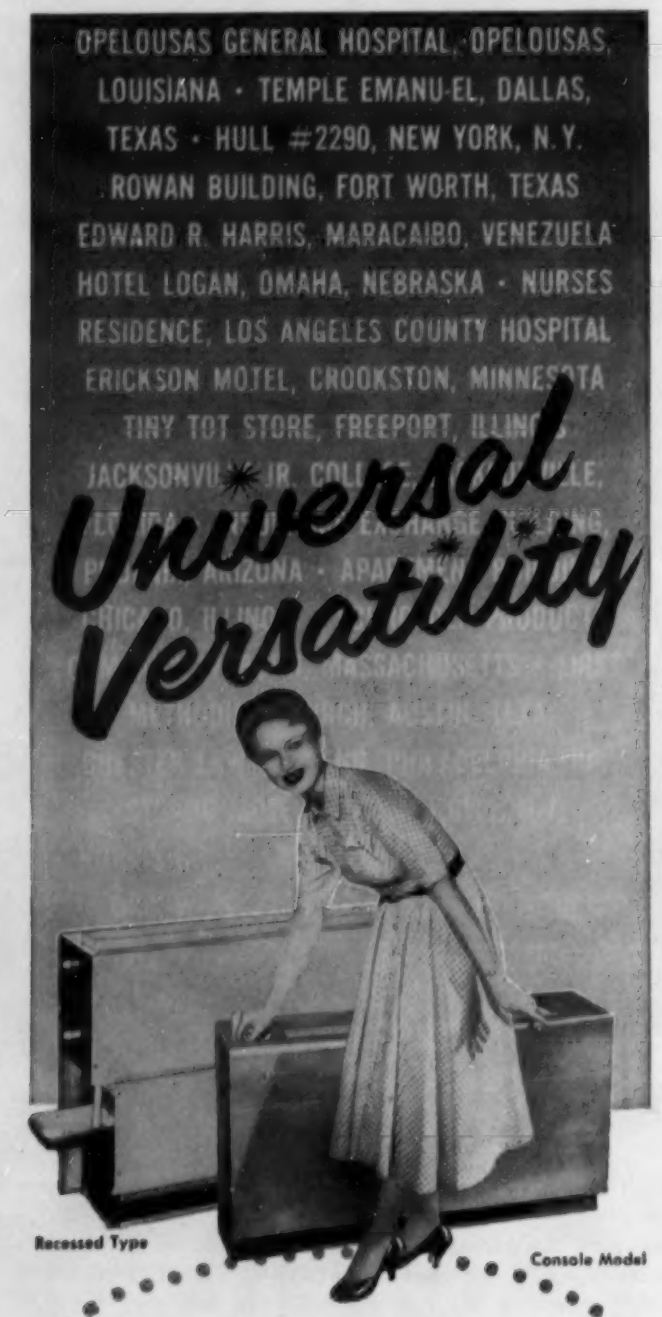
CINCINNATI catcher Forrest "Smokey" Burgess (center) and pitchers Art Fowler (left) and Joe Nuxhall compare the outside temperature with that in their newly air conditioned dugouts. Designed and installed by Frigidaire, the air conditioning system gives the Redlegs, America's first professional baseball team and first major league club to use lights, still another important "first."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Universal Versatility
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...one of seven complete lines of year-'round air conditioning equipment

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The most complete line in sizes and types for refrigeration and air conditioning manufacturers, contractors and service men.

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NON-REFILLABLE CARTRIDGE

STRAINERS

ANGLE "Y" TYPE

RELIEF VALVES

STRAIGHT-THROUGH AND ANGLE

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HENRY VALVE COMPANY
3215 North Ave. • Melrose Park, Ill.

For more information about products advertised on this page use Information Center, page 26.

Redlegs Air Conditioning--

(Concluded from preceding page)

an unusual problem in air distribution.

Frigidaire engineers solved it, however, by running a duct along the entire length of the press box roof and using eight semi-circular ceiling diffusers through which the cool air is discharged into the box. No air from the booth is recirculated.

A 5-hp. Frigidaire air-cooled condensing unit (CARW-500) in combination with a similar size coil and fan assembly (CBW-500) were selected for the press box system. A thermostat control maintains a temperature differential of about 15° in the press box.

The radio broadcasting booth, a cubical approximately 6 ft. square alongside the press box, is cooled by a 1-hp. Frigidaire room air conditioner. Because the booth is open in front from about 30 in. above the floor, the unit is installed through the lower rear wall. Thus, the well is filled with conditioned air which spills up around the announcers and out through the opening in front.

Hot Area Humors 'Atmosphere' Reporters

Because some sportswriters still prefer to hear the noise of the crowd and feel the midsummer heat, another section of the press box has been left open without air conditioning.

Most challenging assignment faced by the Frigidaire engineers was that of comfort conditioning the dugouts. As every baseball fan is well aware, the dugouts are wide open in front and have to stay that way. A glass front was impossible.

Also, Redleg officials were concerned that there be no drafts which might chill overheated players, or cool off pitchers' arms.

Players Sit Back Out of Any Drafts

It was finally agreed to install a system which "encloses" the dugout with a 36-ft. curtain of cool dry air and effectively shields out the heat. Designed to reduce temperatures about 10°, it discharges air from grills along the length of the dugout ceiling. Players sit on a bench along the rear dugout wall, about 4 ft. behind the air curtain where they are free from drafts.

A 5-hp. Frigidaire water-cooled condensing unit (CWV-500) in combination with a CBW-500 coil and blower unit are used in the dugouts. Identical systems have been installed for both the home and visiting teams.

One and one-half horsepower Frigidaire room air conditioning units are used to cool the TV monitor room and the lower press room. Rounding out the "package" were 12 Frigidaire pressure-type water coolers installed at various points throughout the stands for the convenience of the fans.

All the equipment was installed by Bachman's Refrigeration-Heating, Inc., a Frigidaire dealer in Cincinnati. Both branch and factory engineers cooperated in planning the installation, however.

It may be only a coincidence that the Redlegs, who were wallowing in the second division for more than a decade, have become pennant contenders since the air conditioning has been installed. And perhaps it has no connection with the fact that Cincinnati sluggers are threatening the league home run records.

However, one sportswriter has suggested that great hitters like Ted Kluszewski and company already may have discovered that the quickest way to fulfill their responsibilities at the plate and return to the refreshing coolness of the dugout is to aim for the fences.

Who can tell? If this proves to be the case and the Redlegs do win the flag this year, air conditioned dugouts may soon become as common to the national pastime as night baseball.

WAITE HOYT, former Yankee pitching great who broadcasts all Redleg games, works in air conditioned comfort at Crosley Field despite the fact that his radio booth is open in front above table height. A 1-hp. Frigidaire room air conditioner set through the rear wall of the booth keeps the "well" filled with cool air which "overflows" up around the sportscasters and out the window. Thus, comfort zone temperatures are maintained.

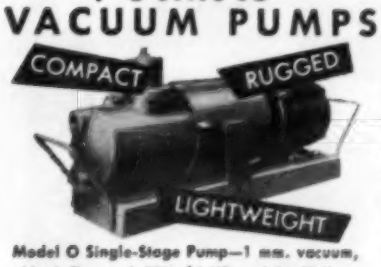
Worthington Names Lawrence P. Brady

NEW YORK CITY—Appointment of Lawrence P. Brady as national account sales coordinator for air conditioning and refrigeration equipment in Worthington Corp.'s New York district office was announced recently by W. J. Van Vleck, manager of the New York district office.

Brady will be responsible for sales contact work with the buying headquarters of all national accounts located in the New York district office territory for air conditioning their properties in other areas.

Brady has had wide experience in air conditioning and refrigeration sales with Allan Air Products Corp. and Rogers Diesel & Aircraft Co., it was pointed out.

FOR DEHYDRATING AND TESTING . . .
BEACH-RUSS
Portable
VACUUM PUMPS



Model O Single-Stage Pump—1 mm. vacuum, blank flange, 1 CFM, ⅛ HP, weight 48 lbs.

Model A Two-Stage Pump—1/10 mm. vacuum, blank flange, 2.5 CFM, ⅓ HP, weight 80 lbs.

Write for prices and data.

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This seal is your assurance of a successful installation every time

The American Blower Packaged Air Conditioner that bears this seal is the result of American Blower's 75 years' experience as a leading producer of air-handling and conditioning equipment. And it's your customer's assurance of years of trouble-free air conditioning. Get all the details today on how easy and profitable it is to handle the attractive, competitively priced American Blower Packaged Air Conditioner. Write American Blower Corporation, Detroit 32, Michigan.

DISTRIBUTORS: Choice, protected territories still available — without investment in carload lots or tie-in products — call or write today.

AMERICAN BLOWER

Division of American-Standard

PACKAGED AIR CONDITIONERS

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

"colors in drinks preferred by consumers" reported back by the research outfit.

Philosophy of the Week

"As soon as you move one step up from the bottom, your effectiveness depends on your ability to reach others through the spoken or written word. And the further away your job is from manual work, the larger the organization of which you are an employe, the more important it will be that you know how to convey your thoughts in writing or speaking.

"In all organizations, whether it is government, a business corporation, or the army, this ability to express oneself is perhaps the most important of all the skills a man can possess."—PETER BRUCKNER.

Air Conditioning and Efficiency

Looking for a sales point? Now hear this:

The Pyle National Research Co. found that, during an 11-day Chicago heat wave in July, typewriting errors in 19 offices increased almost 1,000% when the outdoor temperature leaped from 78° to 96°. Stenographic errors increased from the usual 11 per hour to 95 per hour in the offices post-studied.

And in one factory operation post-examined during the same heat wave, 564 units were produced in 282 man hours. Afterward—during a cooler period—the same workers produced 897 units in 220 hours.

Doctors interviewed by this research outfit explained that heat and humidity increase the heart rate, thus causing fatigue.

Q.E.D.: Air conditioning pays for itself in factories and offices.

Promising New OEM Market

Both dairy farmers and those of us who buy milk benefit by a new development: refrigerated bulk tanks which replace the old-fashioned shipping can. These tanks hold up to 1,000 gals., and save a tremendous lot of shipping space.

Furthermore, refrigerated ambulatory tank trucks save time and effort for farmers, cut hauling costs, and make it easier to keep milk properly refrigerated in transit.

In Wisconsin, possibly America's leading dairy state, more than 3,500 farmers now use bulk tanks (three times as many as did in 1955).

Here's a promising outlet for refrigeration components manufacturers and jobbers—also for refrigerated trucks suppliers. Are you aboard, brother?

Boon to Fisherman

Catching fish is fun—but most people hate to clean them.

Kal Kanerva of Rock, Mich., brings joy to all. He has invented an automatic fish scaler.

With this home-made device he can swish the scales off 50 or more medium sized perch in 15 minutes. Cleaning that many fish by hand would require a couple of hours—if you had the patience.

His fish scaler is a cylindrical piece of wood (about 1½ in. in diameter and 2 in. long) covered with a sheet of galvanized metal punched full of nail holes—with the rough side on the outside.

A bolt through the center attaches the gadget to any hand-operated electric drill. Thus the rough surface, revolving at high speed, skims off the fish scales quickly and delicately. A plastic shield over the top keeps scale chips from flying into the operator's face.

Manufacturers, attention!

Motto of the Week

Do It Tomorrow—

You've Made Enough Mistakes Today.

(Said to be a favorite of "Engine Charlie" Wilson.)

Confession of the Week

An Artesia, N. M. editor was amused by the following letter:

"I notice in the paper your proclamation for a whole week of wild life. I am indeed sorry to inform you that I cannot comply with your instructions. In January I reach my seventieth year, and when it comes to spending an entire week of wild life, I just can't cut the mustard any more."

Quick Puzzle

Count aloud the F's in the sentence below.

Count them ONLY ONCE: do not go back nor count them again.

FINISHED FILES ARE THE RESULTS OF YEARS OF SCIENTIFIC STUDY COMBINED WITH THE EXPERIENCE OF YEARS.

Best Quotes of the Week

Wonderful headline from *Business Week* magazine:

British Cabinet Links Lung Cancer to Smoking—
Tobacco Shares Rise.

It has always seemed to me that you can buy a man's time; you can buy a man's physical presence in a given place; you can even buy a measured number of skilled muscular motions per hour or day. But you cannot buy initiative; you cannot buy loyalty; you cannot buy the devotion of hearts, minds, and souls. You have to earn these things. — CLARENCE FRANCIS, Chairman, *General Foods Corp.*

Too many people try to be happy just by being good, rather than by doing good. — PETER KUNTZ.

What is a customer? He's not just a man—she's not just a woman! He or she is your business, your hope for the future, your plans for expansion, your children's education, your reputation in the community.—DAN VALENTINE.

A man is getting along the road to wisdom when he begins to realize that his opinion is just an opinion. — *Supervisor Magazine.*

All autobiographies are lies. I do not mean unconscious, unintentional lies; I mean deliberate lies. No man is bad enough to tell the truth about himself during his lifetime, involving as it must the truth about family, friends, and colleagues. —GEORGE BERNARD SHAW.

It is a mark of intelligence, no matter what you are doing, to have a good time doing it.—BESS WHITE COCHRAN.

A door which is burst open by force is not truly open. Only a door opened by mutual respect and trust is truly open.—*Chinese Proverb.*

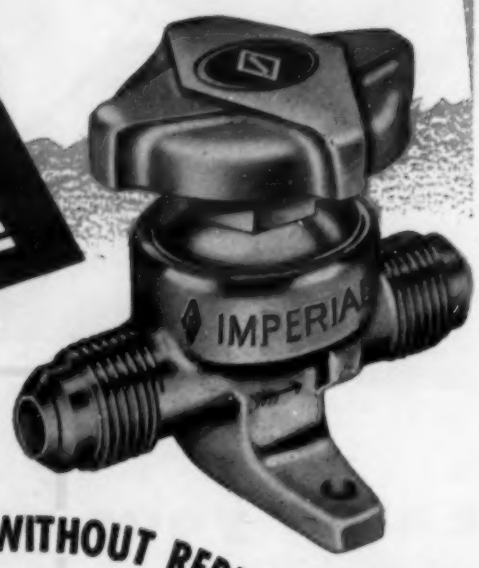
A common mistake of youth is that it thinks intelligence is a substitute for experience; that of age that it thinks experience is a substitute for intelligence. —*Carrollton* (Ky.) *News-Democrat.*

Prize recollection of Edward H. Fox, retired chief of Detroit detectives, involves the time he cornered four robbers in a meat market and was shot in the fracas.

On the police headquarters "blotter" it was recorded:

"Chief Shot was foxed."

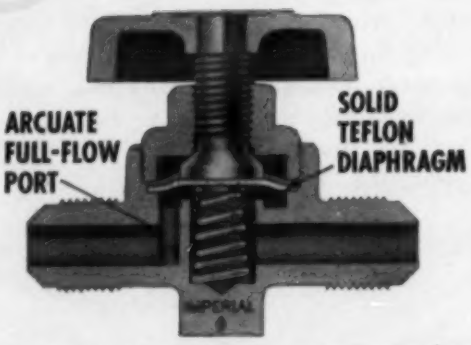
for COMPACTNESS that means REAL ECONOMY use the IMPERIAL DIAMOND VALVE



NOW 2/3 the Size WITHOUT REDUCING FLOW!

Cuts Valving Costs

- Introduces an entirely new idea in refrigeration valving practice.
- Matches the industry trend to more compact installations—it fits into much smaller spaces.
- Economy . . . cost of valving is substantially reduced.
- Solid TEFLON Diaphragm . . . impervious to all refrigerants . . . long lasting . . . withstands unlimited openings and closings.
- Also other advanced design features . . . such as arcuate full flow ports . . . mean top efficiency.
- Quick easy finger-tip operation.
- *Copper tube extensions* on solder type dissipate heat so valve can be soft or silver soldered into line without disassembling.



Ask for Bulletin No. 115-REF

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FITTINGS • VALVES • DRIERS • FILTERS
FLOATS • CHARGING LINES • TOOLS for Cutting, Flaring, Bending, Pinch-Off, Swedging

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DRY BEVERAGE COOLERS · MILK DISPENSERS

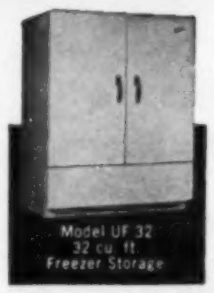
MEET THE BUYER DEMAND

A BIG FREEZER VALUE

UNITED'S DUAL PURPOSE UPRIGHT

UPRIGHT FREEZERS · BEER DISPENSERS

SAFELY SHARP FREEZES



SAFELY STORES OVER 1,000 lbs.

This big freezer value provides ideal backroom storage wherever food is served or frozen food sold. Meeting the most rigid commercial demands it means an extra measure of safety for food . . . extra savings in economy of operation.

Write for full information.

DESIGNED, ENGINEERED AND MANUFACTURED BY

United REFRIGERATOR COMPANY

HUDSON, WISCONSIN

WRITE, WIRE OR PHONE TODAY

For more information about products advertised on this page use Information Center, page 26.

NEW "weatherproof" and air-cooled Brunner-Metic semi-hermetic outdoor condensing unit shows air discharge side and access panel on end.

Semi-Hermetic Outdoor Unit Added to Brunner Air-Cooled Line

GAINESVILLE, Ga. — The Brunner Co. here announces the addition of its semi-hermetic outdoor condensing unit to the company's line of high-torque semi-hermetic motor compressors and condensing units.

The totally air-cooled unit is available in either 2 hp. or 3 hp., models RAS-2 and RAC-3, respectively. It is a high-capacity unit for operation in ambient temperatures up to 120°, according to A. G. Zumbrun, Sr., president.

"The easy-to-install outdoor unit has been engineered for use in air conditioning and commercial refrigeration in residential locations where water is scarce or prohibitive in cost, in buildings lacking basement space, and in farm application for bulk milk cooling where inside space is at a premium," it was pointed out.

"Enclosed in a weatherproof steel cabinet, the unit measures 40 in. in length, 32 in. in depth, and 25¼ in. in height, and may be placed adjacent to a building at ground level or installed in roof construction.

"In addition, a full 1,000 c.f.m. condenser air per ton is supplied for efficient economical operation while a powerful centrifugal blower moves air quietly and positively regardless of wind direction.

"Where desired, a combination heating-cooling thermostat is available as an accessory, according to Brunner.

"A foolproof, but readily accessible control panel opens to expose all electrical components for inspection."

Cool Carpets

JACKSONVILLE, Fla. — Air conditioned, a new specialty shop, Carpets Economy, has been opened at 5260 Beach Blvd. by Austin Williamson. The firm has 2,500 sq. ft. of floor space.

'Cool Hole In the Ground'

Need for Comfortable Display Space In Tunnel Is Met with Air Conditioning

NEW YORK CITY—To air condition "a hole in the ground" can be quite a problem.

A New York structural display company, called upon to create a cool, pleasant enclosure in a tunnel where the temperature is consistently over 90° F., used equipment built by Typhoon Air Conditioning Co. to do the job.

AREA NEEDED TO DISPLAY 'PIONEER III'

The tunnel, part of the complex maze of underground passages that make up Grand Central Terminal, is being used to display "Pioneer III," a new ultra-lightweight railway passenger coach of the Budd Co. of Philadelphia.

The Budd planners, seeking a central location for the convenience of railroad officials and the press, found the Grand Central tunnel, under the Waldorf-Astoria hotel, ideally situated but unnsatisfactory in two major respects: it was dirty and the already hot enclosure would be made even hotter by the lights necessary to illuminate the area.

The problem was passed to the Structural Display Corp., engaged to build the enclosure, and Structural Display promptly passed it on to the Billen Engineering Co., one of Typhoon's New York distributors.

"After studying the difficulties involved in the task, Billen engineers worked out an arrangement of Typhoon waterless air conditioning equipment that guaranteed a comfortable 70 to 75° level," Typhoon reported.

"This 15° drop was accomplished despite the fact that the partitions of the enclosure left a 4-ft. opening around the top. (From ceiling to floor in the tunnel is 16 ft. The partition is 12 ft. high).

15 TONS OF COOLING

"To make this subterranean showplace comfortable, 15 tons of Typhoon waterless air conditioning equipment—three 5-ton air-cooled condensing units and three 5-ton low-side air handling units—were used with the confidence that 100 persons could be accommodated comfortably in the 140-ft. by 30-ft. enclosure when the 'passenger coach of the year' went on display July 16.

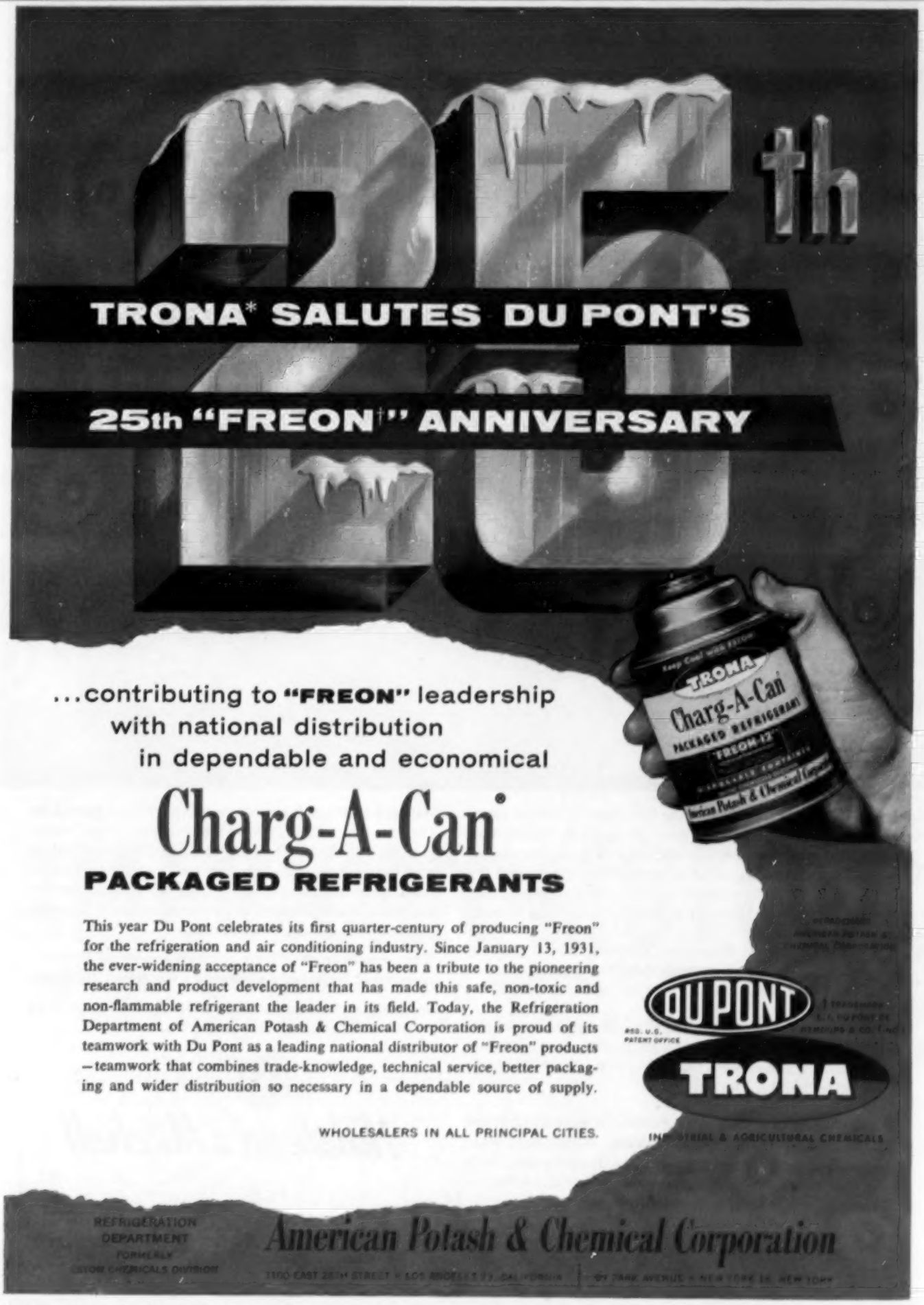
"The installation is the first of its kind ever used in the Grand Central tunnel."

NYU To Conduct Air Conditioning, Heating, Refrigeration Courses

NEW YORK CITY — Twelve courses for adults in architecture, building construction, and mechanical equipment of buildings will be offered during the 1956 fall semester at New York university's division of general education, Dean Paul A. McGhee announced.

Included in the courses are heating and air conditioning design, Mondays; elements of refrigeration, Tuesdays; heating and ventilating, Tuesdays and Thursdays; and air conditioning, Wednesdays and Fridays.

Special certificates are awarded those who successfully complete the series of courses. Interested persons may register by mail or in person from Sept. 10-28.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This year Du Pont celebrates its first quarter-century of producing "Freon" for the refrigeration and air conditioning industry. Since January 13, 1931, the ever-widening acceptance of "Freon" has been a tribute to the pioneering research and product development that has made this safe, non-toxic and non-flammable refrigerant the leader in its field. Today, the Refrigeration Department of American Potash & Chemical Corporation is proud of its teamwork with Du Pont as a leading national distributor of "Freon" products—teamwork that combines trade-knowledge, technical service, better packaging and wider distribution so necessary in a dependable source of supply.
WHOLESALERS IN ALL PRINCIPAL CITIES.
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ASPIR-JET
SPRAY NOZZLES RAISE TOWER EFFICIENCY

The swirling, atomizing action of the water as it goes through the Aspir-Jet means more effective heat transfer and higher efficiency from any spray-filled cooling tower. Pressure as low as ½ pound gives effective water break-up and distribution. Formed of butyrate plastic, Aspir-Jets will not corrode.

• Available through Refrigeration and Air Conditioning Wholesalers.

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Frozen Food Prospects, Problems

More Adequate Refrigerated Transport, Shorter Handling Time on Loading Docks, Colder Retail Storage Needed

CINCINNATI — Most problems in commercial freezing of foods have been satisfactorily solved, but storage, transportation, and distribution still leave much to be desired due to ignorance, economics, or a combination of both.

All too frequently, it would seem, frozen foods are exposed too long to high temperatures to maintain best quality between the time of initial freezing and final consumption in the home, judging by many comments made during an all-day conference on frozen foods held by the American Society of Refrigerating Engineers during its 52nd annual meeting held here recently.

Actually, these problems may not be as bad as painted, for increasing sales of all types of frozen foods indicate continued growth of acceptance by consumers despite the shortcomings of distribution, it would appear.

Ten talks were presented at the conference covering frozen bakery goods, sea foods, poultry, citrus products, fruits and vegetables, cooked foods, meats, truck and rail transportation, and warehousing. Chairman was E. J. Robertson, research and development engineer of Wilson and Co.

"It is cheaper to freeze bread and hard rolls and deliver them frozen than it is to bake and ship fresh daily," declared Niles H. Walker, director of product control and development, Arnold Bakers, Inc., who discussed baked goods.

5 Rules for Good Quality Frozen Baked Goods

Qualifying his statements by pointing out that his experience was limited to bread and hard rolls, Walker suggested five "important rules" for obtaining good quality frozen baked goods:

1. The product must be fresh and of good quality.
2. Proper packaging is essential.
3. It must be frozen quickly. (Within three to four hours at -20° F. is satisfactory, Walker said).
4. After freezing, product must be stored at 0° F. with minimum fluctuation of temperature.
5. Product must be thawed immediately after removal from 0° storage—in four hours or less.

"We have held properly wrapped frozen bread one year at 0° F. and found it satisfactory after proper 'reconditioning,'" Walker said.

A 1-lb. loaf of bread, double wrapped, is frozen in three to four hours at -20° F. with good air movement, starting with the bread at 80° when wrapped, but the bread actually stays in the freezer six hours or more before being shifted into 0° storage, Walker explained. Hard rolls take 15 hours to freeze, he added.

Frozen breads and rolls are stored by Arnold Bakers one week to two months in 0° F. at terminal warehouses. Here the distributor, Walker pointed out, has three choices:

1. He can thaw products before delivery.
2. He can load the frozen products and allow them to thaw on the way to the retail store.
3. He can deliver them frozen for sale as frozen baked goods.

Arnold Bakers has a 14-ton system on its freezer and 4 tons of refrigeration for storage.

"We can freeze 1,000 lbs. per hour at less than 1-cent per pound," Walker disclosed.

The Lower the Temperature The Better for Sea Foods

The lower the temperature the better for sea foods, indicated Dr. Charles Butler, chief, Technology Section, Fish & Wildlife Service, U. S. Department of the Interior.

"Fish can spoil at 10° or 20° F. even though they feel solidly frozen at that temperature," he cautioned. "You must keep frozen fish at 0° F. or lower—down to -20° F., if you can afford it," he urged.

The term "sea foods," he also pointed out, represents some 160 products, all of which are likely to differ considerably in freezing and storage requirements.

Fish, Butler explained, start to lose their flavor as soon as they die, so that aging is not desirable. In fact, he indicated, fish should be cooled down to the freezing range of 23° to 29° as quickly as possible after they're caught.

Poultry Requires Rapid Freezing To Retain Color

Rapid gains have been made by freezing in the poultry business, according to W. C. Loy, chief chemist and director of dairy and poultry research for Wilson and Co.

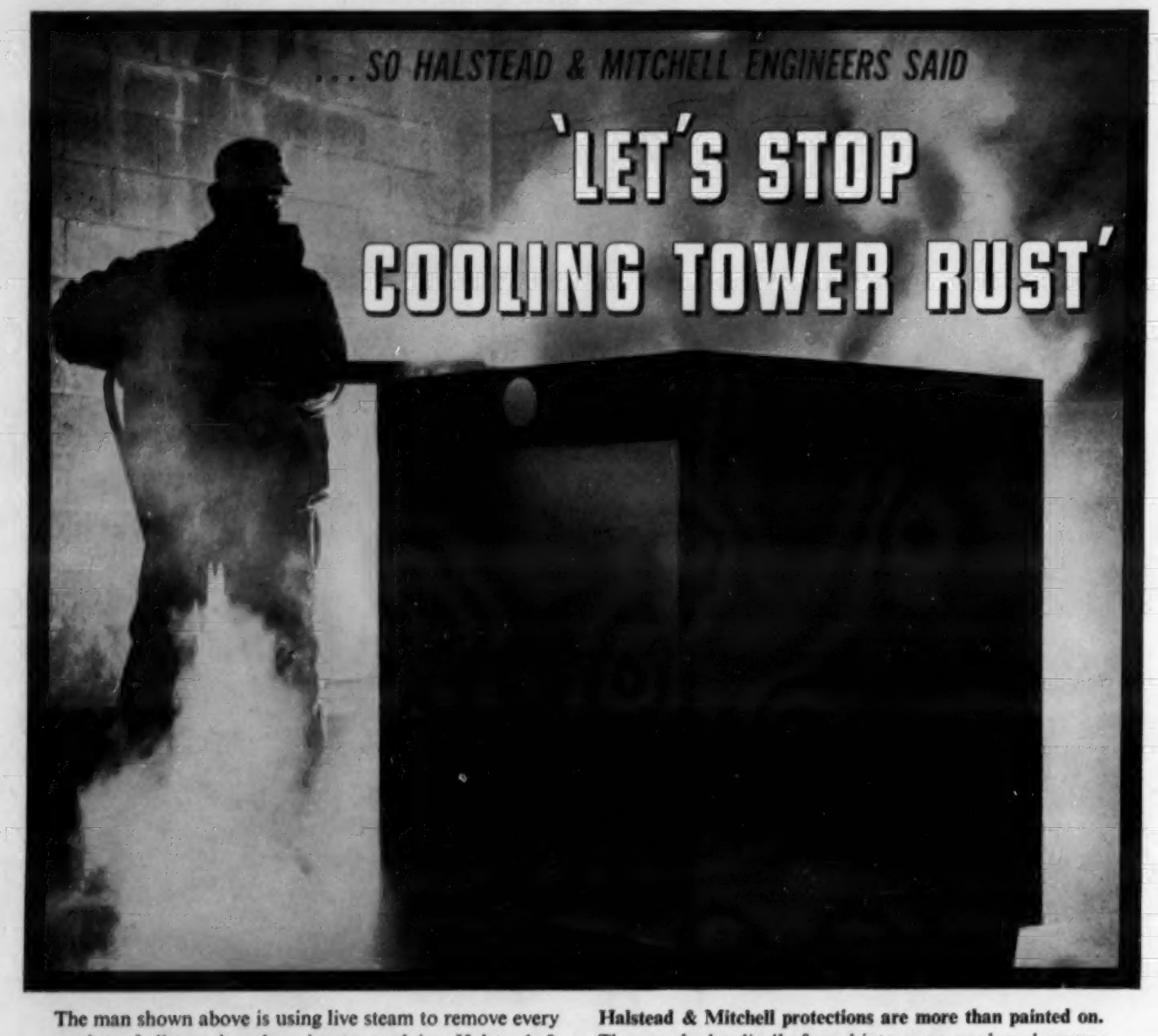
"There were over 133 million lbs. of frozen poultry in storage on May 1, and this isn't the biggest season," he told the ASRE conference.

In addition to frozen "New York" dressed and eviscerated poultry, there are also frozen pieces and stuffed poultry on the market, he explained.

"Initial freezing of poultry is very important, and while fast freezing isn't required for drip or palatability, it is required for the sake of appearance. Appearance depends on the rate of freezing. If not frozen rapidly, poultry will discolor. Older birds, with more fat, don't need such fast freezing, however," Loy declared.

"But, in general, the faster

(Continued on next page)



The man shown above is using live steam to remove every vestige of dirt and scale prior to applying Halstead & Mitchell protections which withstand both rusting and *all* present day water treatments normally recommended for cooling towers and condensers. These unusual protections are used *only* on Halstead & Mitchell's Cooling Towers.

First protection is Vinsynite. Vinsynite works twice—it phosphates the metal, stopping rust dead in its tracks, and it forms the perfect adhesive base for paint coats to follow.

Vinyl Zinc is then applied, and vinyl paints have made their reputation because they are tough, flexible, inert and water resistant. Water vapor is locked out as the Vinyl Zinc locks to the underlying Vinsynite.

Third protection is chlorinated rubber, a paint which forms a thick film. Adequate film thickness is important when contact with water and high humidity is unrelenting, as in cooling tower service. Chlorinated rubber is also noted for its toughness and water resistance.

Halstead & Mitchell protections are more than painted on. They are hydraulically forced into every nook and cranny of every Halstead & Mitchell Cooling Tower so that no spot can ever be left unprotected as a starting point for rust. The combination of heavy film, vapor seal, toughness and tremendous adhesion offer protection against corrosion matched by no other manufacturer.

Want Details on the Widest Selection in Cooling Towers?

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Write Halstead & Mitchell, Bessemer Bldg., Pittsburgh 22, Pa.
Or See Your Leading Wholesaler

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WOOD ROTTING, TOO, CAN BE STOPPED! We do more than praise the long life of wood used in our wetted decks—we are the only manufacturer who offers a 20-Year Guarantee on wetted deck wood against rotting or attack by fungus!

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For more information about products advertised on this page use Information Center, page 26.

Proper Frozen Food Handling Said To Cut Quality Loss, Cost

(Continued from preceding page) you freeze poultry, the better. A blast freezer operating at -30° F. or lower with air movement of 600 f.p.m. is best for young poultry," he said.

"In storage frozen poultry is fairly stable, but it does tend to lose its bloom. A low, even temperature is best for storage, and if you must have a keeping quality of a year, you'll have to store at -10° F. or lower. There can be some fluctuation of storage temperature without causing harm, but it should be kept to a minimum," Loy advised.

As for refrigerated transportation, Loy said, "there isn't enough of it, and at the retail level delivery and display cases are not necessarily at the right temperature."

Because of these shortcomings, refreezing of frozen poultry is sometimes resorted to, but while "refreezing isn't the best idea it is often necessary," Loy commented.

Poultry Can Be Re-Frozen If Not Greatly Warmed

"If the bird hasn't warmed up too much, it can be refrozen successfully. This must be done rapidly, however," he cautioned.

Noting increased sales of frozen stuffed poultry, Loy pointed out that stuffing is harder to freeze. It must be frozen as fast as possible and maintained frozen.

Sales of frozen pre-cooked poultry items are also gaining, he indicated, commenting that frozen fried chicken is "quite critical in storage because it is subject to staleness. It must be kept at as low a temperature as possible. Pot pies and ala kings are not so critical."

As for eggs, Loy explained that these are normally frozen in 30-lb. tins.

Initial Freezing of Eggs Very Important

"Initial freezing of eggs is very important," he said. "There are many organisms in eggs which can continue to grow at temperatures down to freezing. In a blast freezer at -45° it takes six hours to freeze to the center of the can starting with the eggs at 45°. In an ordinary freezer it would take many hours—16 hours just to cool the tin of eggs down to the freezing point, and 36 hours more to freeze them."

Care must be used in blast freezing, he cautioned. With improper air distribution, the top of the can could be frozen first, thus leaving no room for expansion when the rest of the eggs freeze.

"Properly frozen eggs," Loy said, "can be safely held in storage at least years at a temperature of 0° to -5° F."

Although expressing dissatisfaction with the "average delivery setup" for frozen eggs, Loy pointed out that frozen eggs thaw as slowly as they freeze, so more time can be taken in delivery.

"If eggs are allowed to thaw fully, however, you can hardly refreeze them before spoilage takes place," he warned.

In discussing the citrus industry, Theodore Allegri of the U. S. Dept. of Agriculture emphasized the need for greater mechanization in materials handling.

-4° Best Temperature For Frozen Citrus Items

"Optimum temperature of frozen citrus products is -4° F., but I've seen pallets of frozen juices sit on a truck dock an hour or two in hot weather. Increasing the speed of handling is most important," Allegri declared.

A survey made in 1954, he disclosed, showed that shipping, receiving, and handling accounted for 30% of the costs of frozen food distribution at the wholesale level.

"This percentage can often be cut by improved handling methods," he said.

"Frozen foods have a memory. Anything that happens along the line from processor to consumer affects their quality," emphasized K. G. Dykstra, director of laboratories for Bird's Eye Div. of the General Foods Corp.

And results of a survey which he discussed indicate that frozen foods can be, and sometimes are, exposed to higher temperatures than would be desirable in distribution.

Devoting his discussion primarily to frozen fruits and vegetables, Dykstra suggested a definition for "proper handling" of frozen foods: "conveyance to the ultimate consumer at economy and with no change in product quality."

Following packaging and freezing, fruits and vegetables are subject to the action of bacteria, yeasts, mold, enzymes, chemical action, as well as desiccation and textural changes, all of which can be minimized by maintaining the product at no higher than 0° F., he indicated.

0° Called Fortunate Selection

"While 0° may have been selected at random in the beginning, it has proved to be a most fortunate selection," Dykstra said. "Although the question of public safety does not become a factor until temperatures of 40° or so are reached, 0° or lower is needed to maintain quality of frozen foods," he explained.

Giving results of a survey made in 1952, Dykstra said the average temperature in warehouses was just below 0°, but there were a few rooms with temperatures at 10° or higher.

"There is room for improvement," he commented.

Temperature of break-up

(Continued on next page)

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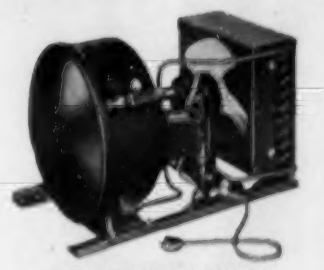

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SPECIALISTS IN REFRIGERATION SINCE 1914

Frozen Food Men Ask Storage, Transport Display at Lower and Even Temperature

(Continued from preceding page) rooms ranged from 0° to 40°, and "we found that some frozen food was stored for extended periods at the higher temperatures in these rooms," he said.

"Preferably, these break-up rooms should not be used for frozen food storage, but if they are, the temperature should be kept at 10° or less.

On transportation Dykstra commented that "we think mechanically refrigerated cars are the answer to distribution of frozen foods by rail. Many refrigerated trucks are inadequately insulated and powered, but there should be gradual improvement here."

Frozen foods generally are being delivered to retailers at too high temperatures, he also indicated. Nearly half of those surveyed showed 15° F. or higher, he said.

In retail cabinets the 1952 survey found a high proportion of cabinets where temperatures were at 15° or more at the top of the cabinet with 1% of the product defrosted.

"Of course, the product usually does move rapidly at the retail level, and temperatures at the bottom of the cabinet are much better," Dykstra said.

Frozen meats, like other foods, should be kept at no higher than 0° F. for proper preservation, pointed out C. K. Wiseman, manager of the Development Dept., Research Div., Armour and Co.

While proper storage of frozen meats is essential, proper preparation and cooking are important, too, Wiseman said.

"Whenever practical, frozen meats should be cooked while still frozen," he suggested. "If speed is important, frozen meats could be thawed under cold water, but they should never be thawed at elevated temperatures. Improper thawing," Wiseman explained, "results in rapid multiplying of microorganisms.

Refreezing Meats Should Be Avoided

"Refreezing of thawed meat apparently can be done safely within reason," he added. "If the meat is in good condition, refreezing will do no harm, but if the meat isn't in good condition, refreezing will do it no good. In general, though, we believe refreezing is to be avoided," Wiseman declared.

Data on maximum safe storage life of frozen meats at various temperatures was also offered by Wiseman as follows:

Beef and lamb: four months at 10°, six months a 0°, one year at -10°, one year plus at -20°.

Veal: three months at 10°, four months at 0°, eight months at -10°, one year at -20°.

Pork: two months at 10°, four months at 0°, eight months at -10°, 10 months at -20°.

Pork sausage, smoked ham and bacon: one month at 10°, two months at 0°, three months at -10°, four months at -20°.

Pre-Cooked Frozen Foods Growing Rapidly

Pre-cooked frozen foods represent "one of the fastest growing industries in the world today," according to Jacob Fisher, president of Frigidinner, Inc., which began operations 12 years ago.

But maintenance of proper temperature is extremely important with pre-cooked foods.

"Because these foods are pre-cooked, many people misuse and mishandle them, thinking they can do no harm," Fisher said. "This is wrong. Pre-cooked foods are very susceptible to bacteria growth, which can be caused by excessive handling and too high temperatures.

Heating Will Not Kill Bacteria

"Heating the foods for serving doesn't usually kill the bacteria because the heating is limited. Also," Fisher explained, "the bacteria already may have produced toxins, which this heating won't affect."

Commenting that "frozen dinners left on a platform in 75° temperature will defrost in 30 minutes," he also stated that "you don't see frozen foods standing around on platforms quite so long nowadays."

While much is still to be desired in the distribution of frozen dinners, Fisher declared that the "manufacturer must have more than just know-how. He must have the equipment to bring the internal temperature of dinners down to 0° F. within three to 12 hours.

Looking at frozen foods from the truck refrigeration viewpoint, M. B. Green, vice president of U. S. Thermo Control Co., declared that problems of distribution "are an economic situation. It's hard to point the finger at any one part of the industry.

"All processors have a high-priced product for the most part, so they want to keep the costs of distribution down as far as possible," Green said.

This situation, he implied, tends to limit the amount of money that is spent for such things as proper refrigerated transport.

Ideal Frozen Foods Trailer Discribed

Green commented briefly on requirements of the "ideal" trailer for frozen food transport: metal parts don't penetrate the insulation; there is a good moisture vapor barrier on the outside; the insulation is impervious to moisture; ducts bring refrigerated air to the back and side walls of the trailer.

"Our companies have great faith in the future of the frozen foods industry, and we are demonstrating that faith by providing adequate numbers of the transportation vehicle which the industry desires and which has substantially contributed to the growth of that industry," declared Jno. C. Rill, president of Fruit Growers Express Co.

"These companies will be operating 1,080 mechanical refrigerator cars by the end of 1956 with the completion of the current construction program," Rill disclosed. "Approximately 2,700 mechanical refrigerated cars are on order by all companies," he also said.

Not only do mechanical cars give the required 0° not obtainable with ice and salt mixtures in high ambients, but they have other advantages, Rill said.

Pre-cooling time is reduced to six to 12 hours compared with 24 to 36 hours; the cars are more dependable; re-icing is avoided; they have greater loading space and less weight, and corrosion damage is eliminated.

Sporlan announces a complete line of replaceable core Catch-Alls with these 5 great advantages

1 The performance record of the famous Sporlan molded porous Catch-All Core, that keeps air conditioning systems perfectly clean, perfectly dry and acid free, is known by engineers everywhere.

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5 Main line installation means simplified piping and greater over-all economy.

for air conditioning from 5 to 100 tons F-12

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Remember . . . Peak Performance on all installations is yours when you buy Sporlan Right Down The Line.

Non-replaceable core Catch-Alls for refrigeration and smaller air conditioning installations are also available.

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89 BROAD ST., NEW YORK 4, N. Y.

For more information about products advertised on this page use Information Center, page 26.

'56 Ice Cream Output May Exceed '55 Total Of 630 Million Gals.

NEW YORK CITY—Ice cream output last year totaled 630 million gallons, using nine billion lbs. of milk, it was reported here recently.

This year's production of the frozen delicacy is expected to be even bigger. In May it ran 7% higher than a year ago, 21% ahead of two years ago.

Ice cream eating hit its high tide in 1946. Folks ate 714 million gallons of it that year. Dairymen are hopeful that that high level of consumption may be reached again this year. But it will take a big jump.

Americans ate ice cream at a 22.8-lbs. per capita clip in 1946. Last year's per-capita consumption was 17.8 lbs.

Strawberries Should Be Stored at 30° F. or Less, Study Indicates

DAVIS, Calif.—Storage temperature of strawberries should be about 30° F., definitely not above freezing for any length of time, according to the University of California, College of Agriculture researchers here.

Working in conjunction with the Agriculture Dept., university scientists learned that only mature, dormant strawberry plants should be stored. Packing should be good enough to avoid drying.

Even though plants become encased in ice, they are not damaged, it was reported. At present, researchers do not know just where the point of damage from temperatures below 28° will be, but there is some evidence that even at 28° the result is slower starting and fewer runners than at 30°.

USDA research men have also indicated that cold storage at 32° for two weeks has enabled strawberry plants to withstand a two-minute dip in 127° water. This destroys nematodes and the cyclamen mite, it was noted.

Storage period is at least seven months, researchers added.

Modern Gets Charter

BOWLING GREEN, Ky. — Modern Refrigeration Co. here has been granted a state charter to sell and rent refrigeration and restaurant equipment.

Dairy Switches to Air-Cooled Equipment for Ice Cream Room

80-Hp. System Can Hold -20° Temperature

BALTIMORE—After two years of observing Kramer "Unicon" air-cooled refrigeration systems in several of its branches, Delvale Dairies, Inc. recently installed a Unicon air-cooled condenser and type L "Thermobank" automatic hot gas defrost on the 80-hp. refrigeration system in its main plant.

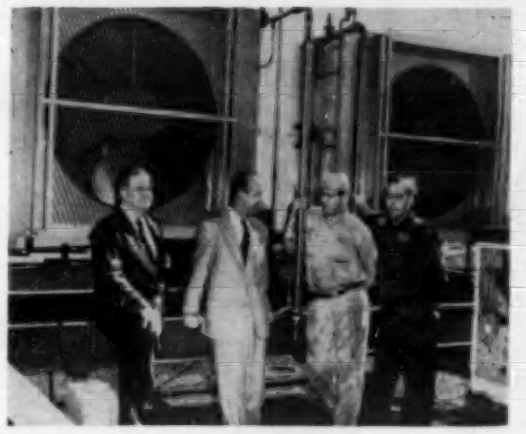
According to Paul W. Hammond, Delvale Dairies vice president, increasing water and maintenance costs motivated the switch to air-cooled operation.

The new installation services an ice cream room 97 by 28 ft. The room is maintained at -20° F. and handles 1,500 dozen ice cream specialties per hour.

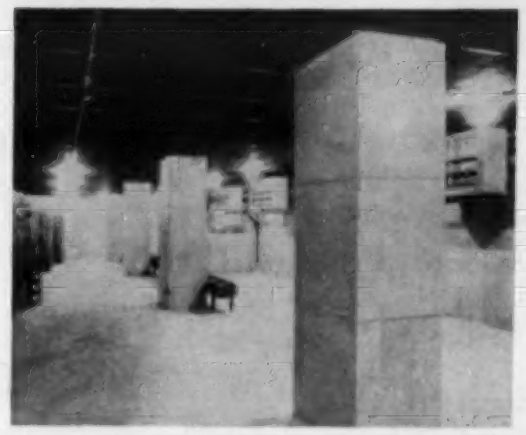
Two Brunner 40-hp. "Freon-12" compressors are installed in the system. The condensing load is handled by a single BD4000 Unicon mounted on the roof. Equipped with the Kramer "Winterstat," the unit will maintain proper head pressure in an outside temperature range of 100° to 0° F., the manufacturer says.

The ice cream room is equipped with two No. 26 Thermobank type L systems.

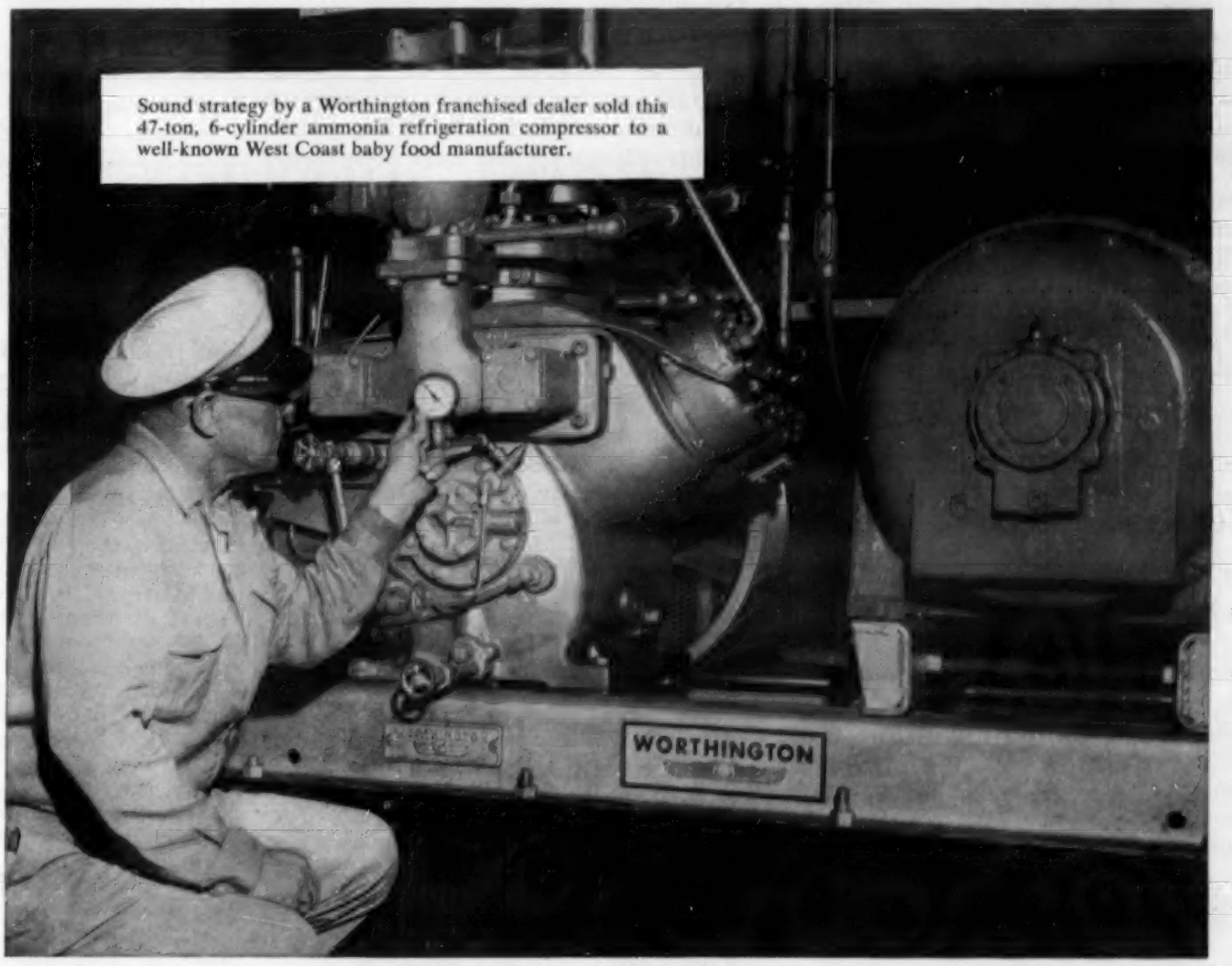
Installation was sold by the Roche & Hull, Inc. of Baltimore under the supervision of William S. Rock, sales engineer.



MODEL BD4000 Unicon condenser serves two Brunner 40-hp. "F-12" compressors at Delvale Dairies. Standing in front of the Unicon (l. to r.) are George J. Roche, William S. Rock, Eldon Fogelsanger, and Edwin Rust.



INTERIOR of ice cream storage room at Delvale Dairies is equipped with two type "L" Thermobank systems model 26.



Sound strategy by a Worthington franchised dealer sold this 47-ton, 6-cylinder ammonia refrigeration compressor to a well-known West Coast baby food manufacturer.

STRATEGY FOR LANDING MORE AMMONIA JOBS!

(It works if you handle the Worthington line)

Quote on every job. As a Worthington dealer, you handle a complete line of refrigeration equipment—from 3 tons up to 1,000 tons. In addition, you can bid on the auxiliary equipment. The Worthington franchise includes high and low speed compressors, shell and tube equipment, and evaporative condensors.

Convert more "quotes" into "orders." A Worthington dealer has an advantage which helps swing the sale—Worthington's more than 70 years of experience in the refrigeration business. This know-how is reflected not only in sound equipment recommendations, but also in the engineering help that the dealer secures from Worthington specialists.

Keep complaint expense to a minimum. Because Worthington equipment is conservatively engineered and built to last, you can count on minimum complaint expense plus the repeat business developed by customer goodwill.

Outpromote your competitors. The secret of doing an outstanding promotion job—at minimum cost—is the Worthington package of sales aids. This powerful combination of bulletins, spec sheets, national and co-op advertising keeps the Worthington dealer foremost in the minds of his prospects.

A few territories are still open. If you'd like to know more about the possibility of becoming a franchised refrigeration dealer, get in touch with your nearest Worthington District Office. Or write to Section A6106, Air Conditioning and Refrigeration Division, Worthington Corporation, Harrison, N. J.

A-6-106

WORTHINGTON

They'll Do It Every Time

by Jimmy Hatlo

JUST BY LOOKING AT THEIR LAST FISCAL STATEMENT, I KNOW SPRINGLESS MATTRESS IS GOING DOWNHILL--I STRONGLY ADVISE AGAINST ANY THOUGHTS OF A MERGER...
BIGDOME IS A VERY SHREWD ARTICLE WHERE BUSINESS DEALS ARE CONCERNED....
ON THE OTHER HAND HE'LL BITE FOR GET-RICH-QUICK SCHEMES THAT A YOKEL WOULDN'T TOUCH...
A CHAIN LETTER FOR TWO BUCKS--I GET BACK EIGHT THOUSAND--HERE-MAKE SIX COPIES AND SEND THEM TO ALL THE MEMBERS OF THE BOARD...
THANKS AND A TIP OF THE HATLO HAT TO FRANK McBRIDE, KANSAS CITY, MO.

Are Consumers Dangerously in Hock To the Finance Companies?

Is our hastily expanded consumer credit situation sound? Is there too much instalment paper outstanding?

Answers to these questions, which are being asked worriedly nowadays, have been provided by Arthur O. Dietz, president of C.I.T. Financial Corp.

"In good times and bad," Dietz points out, "there always have been those who viewed instalment sales credit with misgivings. Leading bankers and industrialists deplored it in the twenties. Roger Babson wrote of the 'Folly of Instalment Buying' in the 1930's and he was not alone in his views.

"However, up to the present, these warnings *never* have been right."

Usually, experts try to answer the question—Is there too much consumer credit?—by referring to certain ratios based on Federal Reserve estimates of the amount of credit outstanding. On this basis:

The ratio of outstanding consumer debt to disposable personal income currently is 13%, compared with a range immediately before World War II—often called a "normal" period—of 9.8 to 10.6%.

However, at this moment the ratio of instalment debt to savings and to so-called "discretionary" income is lower than it ever was pre-war.

The fact that almost half our nation's families now qualify as members of the middle-income group, and have the means and the desire to employ instalment credit (which is a middle-income tool) is highly significant in this connection.

Our "new leisure" also places a new reliance on home mechanization. The family which in 1929 or 1935 was spending so much per week for the iceman, so much for public transportation, and so much for the laundryman or washerwoman, was shelling out for these services the equivalent of modern "time payments" on home mechanization devices.

In these days the iceman has been supplanted by a refrigerator, the municipal bus or suburban train is running at a loss because of a second family car; and the washerwoman has become extinct, thanks to the automatic washing machine.

As a result, our modern-times substitute expenditures for preserving food, keeping clean, and getting to work, *by way of monthly payments* (instead of paying people to do these things for us) have been transformed into "instalment credit," and thus duly (and dully) are reported by the Federal Reserve Board as family debt.

Many a family spends a smaller share of its income on these necessities of life today (in its mechanized household) than it did when daily or weekly cash outlays for servants or services were involved.

However, that spending shift *does* inflate government statistics of family debt totals, in comparison with the past benchmarks.

An immensely important social change is reflected in present community attitudes toward the use of instalment credit. Today time buying is widely accepted and approved, and this form of debt no longer bears any stigma whatever. In fact, it has become a badge of class distinction.

In summary, this is the case for continued expanding consumer credit:

It made possible the great mass-production automobile and mechanized home industries; it is responsible for millions of jobs; and it has brought enormous material blessings to the American public.

Delinquency rates and losses by financing agencies (from people who don't pay their debts) have remained remarkably low in the last several years.

Why? Because recently it has become fashionable to buy valuable durables "on time" instead of tapping savings or trying to save. And it is a mark of social acceptance to keep up with the payments.

Dietz declares: "The U. S. economy needs more domestic customers and more domestic consumption, not less. The obvious solution is to let the powerful stimulant of instalment credit function freely to increase our living standards, our material satisfactions, and our levels of employment and prosperity."

Human relationships are the most powerful selling forces today—and the most overlooked. Human relations is the forgotten art of selling—the form of salesmanship we are often too busy to practice. Only through understanding and an honest concern for the other fellow can sales pay off!—JOHN P. MANSFIELD, president, Plymouth Div., Chrysler Corp.

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'The Conscience of the Industry'

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OFF THE CHEST

MFR. HAILS EDITORIAL ON PUSH-BUTTON SELLING

Mitchell Mfg. Co.
Chicago 14, Ill.

Editor:

"Push-Button Selling Problems of the Future" . . . your editorial in the July 16 issue of AIR CONDITIONING & REFRIGERATION NEWS . . . is the most significant statement yet on the distribution problems of the air conditioning industry.

You ask: "Who will sell air conditioning in the future?"

And, you state that people that bet their personal money in establishing separate operations of specialists will own the future air conditioning industry.

Your article states that the dilemma is urgent, and unless management exercises extraordinary care in devising ways and means of acquiring additional sales manpower, there will be problems ahead. We feel that Automation in Advertising, which is virtually a "Push-Button" Sales Program for the air conditioning specialist, gives him the professional sales support he needs to get business.

Traditionally, contractors have not been aggressive merchandisers, because they have grown up mostly through the trades rather than joined the business as merchandising experts. Where a contractor falls down is in missionary selling and creating new prospects.

We agree with you that Push-Button Selling is important and, therefore, have devoted over 30% of our promotional efforts to a home selling program. But, how many salesmen today can be induced to go out and cold canvas by pushing doorbells? Our survey shows that very few can be motivated—no matter how high the financial returns—to spend a large portion of their time pushing doorbells.

So, if I may add a footnote to your fine editorial, "Automation in Advertising" is a key to a successful future in air conditioning because it can help the contractor, who is cutting his teeth on a bone that is bigger than he can handle.

H. G. HAAS,
Vice President, Advertising

Handy Way to Subscribe

To See the Industry In Action EVERY WEEK

Keep up-to-date on what's going on in your industry. You'll see action weekly in AIR CONDITIONING & REFRIGERATION NEWS. Covers latest news and gives you top how-to-do-it reports on commercial and residential air conditioning, commercial and home refrigeration: manufacturing, contracting, distributing, retailing, and servicing. Read the Industry's newspaper for profit every week. Only $6.00 per year, 52 issues (U.S. and Canada). Foreign: $10.00 per year.

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Frick Sells M-M Farm Machinery Div.

WAYNESBORO, Pa. — Frick Co. here, maker of air conditioning and refrigeration units, early builder of farm machinery, recently announced sale of its nine-state M-M farm machinery franchise to Minneapolis-Moline Co., Minneapolis, effective Oct. 31.

States affected include Maine, New Hampshire, Vermont, New York, Pennsylvania, New Jersey, Delaware, Maryland, and West Virginia.

The transaction, among other things, includes sale of Frick's M-M farm machinery inventories in the area and leasing of certain warehouse properties to the Minneapolis firm.

All current dealer contracts with Frick expire Oct. 31. Contracts now held for the M-M line will be continued by Minneapolis-Moline at the transfer date to give continuous service, it was noted.

Frick contract renewals will include appropriate items of its line.

Operations of the Farm Machinery Div. of Frick in this and other territories are not affected by the deal, it was further pointed out.

Sales will continue to include portable sawmills, diesel engines and accessories, forage harvesters, manure spreaders, land rollers, feed mills, seed-bed makers, packer-mulchers, grain and rice threshers, peanut pickers and combines, and farm specialties.

Carrier Names Cook In Atlanta District

SYRACUSE, N. Y.—Appointment of Harold C. Cook as Atlanta district self-contained "Weathermaker" air conditioning specialist for its Unitary Equipment Div. has been announced recently by Carrier Corp.

Prior to joining Carrier, Cook was employed by M. T. Gossett Co. in Nashville, Tenn.

New Rochester Apts. To Have Optional Cooling

ROCHESTER, N. Y. — Final plans for an 11-story, 622-room apartment house at 1600 East Ave. here were announced recently by Paul and Louis Wolk, developers of the project.

Work will start in August and it will be the largest apartment building in Rochester. Completion is scheduled for sometime late in 1957.

Air conditioning facilities will be available to those tenants desiring it. Contract for the construction of the building has been awarded to Turner Construction Co.

Southern Gets Charter In Greensboro, N. C.

GREENSBORO, N. C.—Southern Air Conditioning Corp. here has been granted a charter by the secretary of state.

Mueller Brass Opens Philadelphia Warehouse

PORT HURON, Mich.—Opening of a new warehouse to serve the Philadelphia area has been announced by A. C. Dappert, vice president in charge of sales of the Mueller Brass Co. The company has operated a sales office in Philadelphia since 1938. This will now be housed in the warehouse building.

Located at 810 S. 53rd St., Philadelphia, the warehouse contains over 15,000 sq. ft. of floor space and will enable the firm to provide prompt service to its customers throughout the eastern half of Pennsylvania, the District of Columbia, and part of Maryland, it was said.

The Philadelphia warehouse will stock a complete line of "Streamline" copper tube and solder-type fittings—refrigeration tube, valves, fittings and accessories, and plastic pipe and fittings.

F. F. House is district sales manager, assisted by R. B. Miles. James Butler is warehouse manager, assisted by C. D. Spencer.

Mueller Brass maintains 12 such fully stocked warehouses, located throughout the United States.

Church Gets Bids On Heating, Cooling

LITTLE ROCK, Ark.—Industrial Mechanical Contractors, Inc. here submitted an apparent low bid of $24,000 for air conditioning and heating equipment to be installed in the new three-story annex at First Presbyterian church, Eighth and Scott Sts.

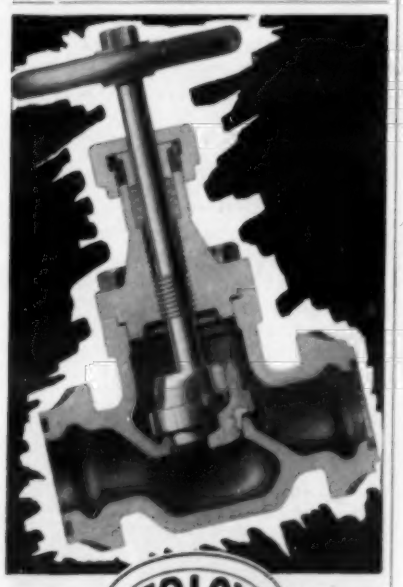
Norman H. Mallory, chairman of the church's building committee, said the contract would be awarded soon following a review of the various bids.

Steinkuller Is York Commercial Manager In Pacific District

YORK, Pa.—B. W. Steinkuller has been appointed Pacific district manager of commercial operations for York Corp., it was announced by R. E. Cassatt, manager of sales, commercial Div. of the air conditioning and refrigeration firm, a subsidiary of Borg-Warner Corp.

Now headquartered in Los Angeles, Steinkuller formerly headed up the San Francisco branch of York's Pacific district.

Steinkuller has been with York for 10 years. He replaces Clifton Sowers who has served York in an executive capacity for many years. Sowers will continue his long affiliation with the company as a consultant to the Pacific district office.



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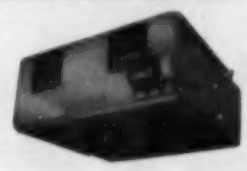
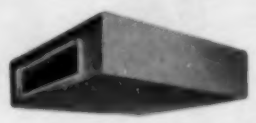
Bring you a dozen design advantages, plus experience since 1882, stock points in principal cities, and competent engineering assistance. Ask for new catalog: write

FRICK CO.

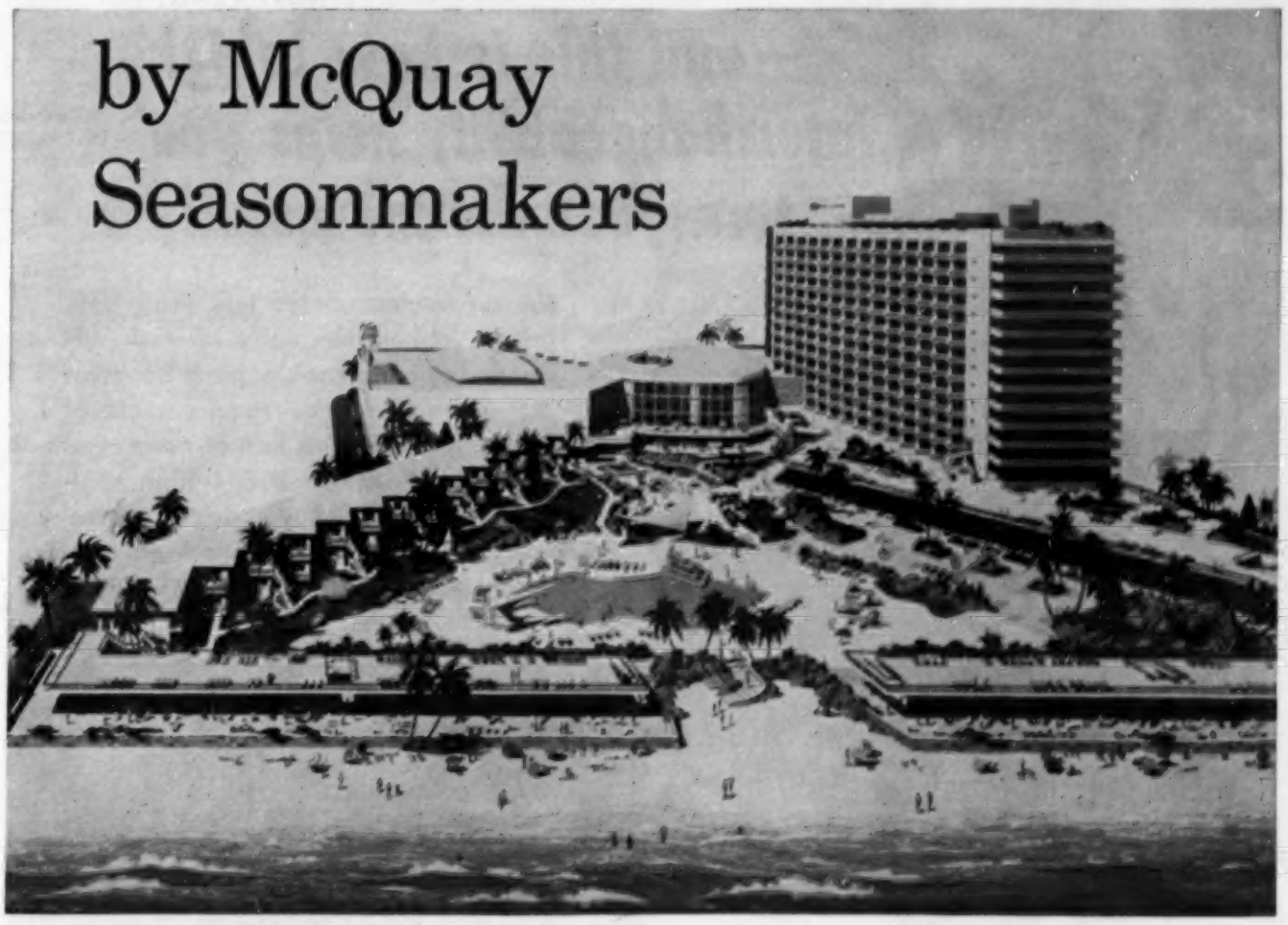
475 Rooms . . . "every one" "push button" air conditioned by McQuay Seasonmakers



McQuay Seasonmaster



Ceiling Type Seasonmaker



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Architect: Morris Lapidus, New York, N.Y. • Air Conditioning Contractor: Hill-York Corp., Miami, Fla.

The newest landmark on eastern Florida's luxurious strip of resort hotels, the Americana at Bal Harbour, features individual, thermostatically controlled air conditioning in each of its 475 guest rooms, parlor suites and deluxe apartments.

In each individual room, guests may dial the desired temperature by a convenient wall control. All 475 McQuay Seasonmaker Units are ceiling mounted to conserve floor space. On the few days when heat is needed in Florida, hot water is supplied to the room units.

In addition to the Seasonmaker room units, 14 McQuay Seasonmasters of horizontal and vertical types in capacities up to 60 tons, provide cooling for the convention hall and other large public rooms.

A 750 hp. compressor chills the cooling water to 45° for circulation through the air conditioners. For condensing, 2250 gpm. of salt water will be pumped from the Americana's wells through the condensers and then back into the ocean.

McQuay Inc.

McQuay representatives in all principal cities

1600 Broadway N.E. • Minneapolis 13, Minn.

HEATING • AIR CONDITIONING • REFRIGERATION

For more information about products advertised on this page use Information Center, page 26.

'V-Belt Trouble Savers' No. 2, 3 Now Available

——KEY NO. R-820——

HARRISON, N. J. — "V-Belt Trouble Savers" No. 2 and No. 3, part of a series of five, are now offered by Worthington Corp.

The easy-to-read self-mailers are intended to help users of V-belt drives diagnose many of the common causes of trouble in their drives. Cartoon-type drawings illustrate each "trouble-saving" tip.

"The mailers are sized just right to tack up on wall near drive, or on machinery itself for reference," the company noted.

Mailer No. 2 (V-1400-M38P) explores the subject of V-belt drives using the Worthington QD (quick detachable) sheave and points out how to select proper drives; install drives and belts; keep sheaves in tip-top shape; adjust belts; check motor and driven shaft for alignment. It presents four useful tips to save trouble in setting up new installation.

Mailer No. 3 (V-1400-M40P) illustrates symptoms of V-belt failure and gives diagnosis and cures for all kinds of V-belt troubles.

Also available with Mailers No. 2 and No. 3 is mailer No. 1 (V-1400-M39P) previously offered by Worthington. Trouble Saver No. 1 tells how to keep V-belt drive delivering maximum r.p.m.

Multi-Vent Catalog Aimed At Architect, Contractor

——KEY NO. R-821——

CHICAGO — Containing all information necessary for specification writing, a new condensed catalog has been released by the Multi-Vent Div. of Pyle-National Co., Chicago manufacturer of air diffusing and electrical equipment.

The catalog, designed to acquaint architects, heating and ventilating engineers, and air conditioning contractors with the advantages of "Multi-Vent" air conditioning, is divided into five parts:

Construction and installation details; performance data; sound level charts; complete description of "Modular" and "Unitary" air diffusers; and a complete list of representatives and agents and information for ordering.

12-Page Guide Covers Aprilaire Humidifier

——KEY NO. R-822——

MADISON, Wis.—Research Products Corp. here recently issued a 12-page sales and service guide on its "Aprilaire" automatic electric humidifier.

Humidity is defined and facts on relative humidity given. Factors affecting indoor humidity, correct indoor humidity, and how moisture is added are explained. Aprilaire humidifier is illustrated, diagrams show evaporative capacity, and typical installations are pictured in Form No. 1,356.

Ratings for Selecting Direct Expansion Coils

——KEY NO. R-823——

LOS ANGELES—A set of ratings for selection of direct expansion coils was recently issued in Recold catalog 52C6a by Refrigeration Engineering, Inc.

Tables are provided in the 28-page catalog covering entering air conditions of 50° to 85° wet bulb in 1° increments, 55° to 105° entering dry bulb, with refrigerants from 30° to 50° and velocities of 400 to 600 f.p.m. at 50 f.p.m. intervals, it was noted.

The catalog gives performances of specific coils allowing interpolations of different refrigerants' temperatures and entering air conditions.

Also considered is difference in coil circuiting and header sizing of coils using "Freon-12" and "Freon-22" refrigerants. Circuiting arrangements, distributor, and suction connection sizes are worked out for all size coils with these loadings.

Folder Discusses Tenney 'TR' Chamber

——KEY NO. R-824——

UNION, N. J. — Tenney Engineering, Inc. recently announced printing of a four-page folder discussing the "TR" chamber designed for controlled low or high temperature and relative humidity testing.

In two colors, the folder contains details regarding applications, performance, construction, and specification data about the TR line.

Calculaide Profit Rule Eliminates Figuring

——KEY NO. R-825——

LONG ISLAND CITY, N. Y.—Recently announced by American Hydromath Corp. here was a "Calculaide" profit rule claimed to give accurate answers on profits, prices, costs, discounts, percentages to eliminate longhand figuring for all computations.

Two scales around the instrument's edge indicate cost and selling price. Percentage, profit, discount, etc., appear then in appropriate windows. The device can also be used for multiplication, division, ratio, and proportion just as a slide rule, the firm said.

This new rule is 4 in. in diameter, can be used with one hand, is constructed of non-warping, non-shrinking plastic, is not affected by moisture, ink, or sweat, the company added.

Drayer-Hanson Describes HRC 'Spotaire' Series

——KEY NO. R-826——

LOS ANGELES—New descriptive brochure (C-R 5632) is available from Drayer-Hanson Inc. explaining the HRC "Spotaire" series of cooling and heating for year-round air conditioning.

Increased to a total of 13 models, units are pictured in operation in meat-cutting and packaging rooms. Construction and performance data, in chart form, dimension diagrams, and full specifications are outlined in the brochure.

Louvra Mfg. Offers Grille, Register Catalog

——KEY NO. R-827——

UNION, N. J.—The Louvra Mfg. & Sales Co., designer and manufacturer of standard and custom-made registers and grilles for domestic, industrial, and institutional uses, announces a new 48-page catalog.

The catalog is divided into several sections for ease of reference.

In section one, the complete line of stock products is illustrated along with technical information, dimensions, schematic drawings, and list prices of the most popular sizes.

The second section contains information and drawings of the many special attachments and features available.

Section three is devoted to complete price lists of all standard stock sizes, giving both prime-coat finish prices and special finish prices.

This section is followed by pages of general engineering data that explains how to determine the proper size and style register or grille, how to select the deflection angle of the bars, and how to mount it into place.

"A DOLLAR TURNED— IS A DOLLAR EARNED"

Says the LEHIGH TEAM

—and this is how Lehigh interchangeability helps you turn your dollars quickly

Small shelf— big stock!

For an investment of less than $50, Lehigh jobbers can carry in stock sufficient interchangeable parts to meet the average service requirements of the complete Lehigh line of open type units ¼ H.P. thru 5 H.P. Lehigh engineering thus gives you triple protection—top quality, modern design, minimum parts problem and investment.

Have You Seen Lehigh's New Air-Frame Tubular Base?

Tired of being a weight-lifter? Then ask your Lehigh jobber to show you the new Lehigh units with this back-saver base. It not only chops off many pounds of useless dead weight but has many other advantages. It gives complete accessibility to all compressor and motor parts. It gives faster and greater sub-cooling by increasing the air-flow over the receiver. It makes inspection and cleaning easier. It adds rigidity and strength to the unit — and it is less costly to ship. Now on all heavy-duty models ⅓ H.P. thru 3 H.P., air and water cooled.

Lehigh BLU-COLD COMMERCIAL REFRIGERATION

Lehigh MANUFACTURING CO.

"America's Most Modern Condensing Units"
PACKAGED, STANDARD & HEAVY DUTY
Road Proven
REFRIGERATED TRUCK SYSTEMS
Compressors for
AUTOMOTIVE AIR CONDITIONING

DIVISION OF LEHIGH, INC. Plant: LANCASTER, PENNA.
Export Department, 13 E. 40th Street, New York City

IDEAL Speed-Freeze PRODUCTS

BEVERAGE COOLERS AND INSTANTANEOUS DRAFT BEER COOLERS. (With Refrigerated Faucets)

WRITE
IDEAL COOLER CORPORATION
2933 EASTON AVE. • ST. LOUIS 6, MO.

For more information about products advertised on this page use Information Center, page 26.

Truck Refrigeration Dealer Grows to Bigness by Developing Systems, Installing, Servicing Refrigeration for Body Builders and Packers

HEADING up truck refrigeration operations for Illinois Auto Electric Co., Chicago, probably largest dealer in country, are Henry B. Sirotek, left, and John C. Souders, shown here checking a new hydraulic drive unit.

SPECIAL platform on wheels is used by Illinois Auto Electric during installation of truck refrigeration units.

ADJUSTING control of new hydraulically powered refrigeration unit is Alfred Schiller, foreman of truck refrigeration division operated by Illinois Auto Electric Co.

CHICAGO—From initial attempts eight years ago to devise a blower system for moving air across an ice bunker, Illinois Auto Electric Co. here has grown into what is probably the largest truck refrigeration dealer in the country.

Present average is better than 10 sales of truck units per week, but "we hope to better that," says Henry B. Sirotek, who heads up technical services of the company.

Henry Sirotek is one of three brothers in the management of the firm that was founded some 40 years ago by their father, who is still active.

Direct supervision of truck refrigeration operations, however, is under John C. Souders, formerly service manager of Lehigh Mfg. Co.

Illinois Auto Electric's entry into the truck refrigeration field came somewhat as a logical development. As the firm's name implies, it began as a retail-wholesale supplier of electrical items for cars and trucks, and this still accounts for a major share of the business.

There are a number of ramifications to its operations. Work with diesel engines, for example, has led to an extensive operation in injectors, including those for diesel locomotives.

As a supplier of truck equipment for many years, the company had established an excellent reputation among a group that represents a tremendous potential for truck refrigeration—the meat packing industry.

With the major packers headquartering in Chicago, virtually all their experiments and purchases of equipment are handled through the main offices. The packers operate thousands of meat delivery trucks throughout the country, all of which require refrigeration of some sort.

Approaches Problem from Electrical Viewpoint

"Back in 1947," Souders explains, "when a customer approached Illinois Auto Electric with the desire of moving air across a wet ice bunker for improved refrigeration, Henry Sirotek approached the problem from the electrical viewpoint.

"The company wound up selling quite a lot of heavy-duty generators to power fans for this.

"There were obvious drawbacks to this type of refrigeration, so Sirotek developed an alternator-rectifier system to operate a 14-volt d.c. motor that would drive a compressor.

"He turned it over to Lehigh to build, but it proved to be expensive, requiring, for example, considerable heavy gauge copper wire," Souders recalls.

By this time the firm was definitely in the refrigeration business.

5 Men Specialize In Installation, Service

Now it maintains a crew of five men specializing in truck refrigeration installation and service, and its garage facilities will accommodate as many as five straight trucks at a time, Souders says.

A goodly number of units are installed in the firm's own shop, where the company follows the policy of having only one man work on a truck unit at a time.

"If we had two men per truck, one would automatically become a helper," explains Souders. "We think having just one man is more efficient."

Among other things, of course, it pinpoints responsibility.

Because of the nature of the truck business, a considerable number of refrigeration units sold by Illinois Auto Electric are actually installed by the body builder, points out Souders.

Truck bodies to certain specifications are ordered by a Chicago meat packer, say, who is also sold refrigeration units by Illinois Auto Electric. The units are then shipped directly to the body builder.

Supervise Installation

"It's our responsibility, however, to see that the units are properly installed," Souders says. "If this is the first time this body builder has ever installed this particular type of unit, we'll have a man on hand to supervise the job."

Where the body builder is thoroughly familiar with the unit and the standards established by Illinois Auto Electric, this isn't necessary.

Perhaps the major problem in truck refrigeration, however, is not the initial installation, but the service that follows.

"This is sometimes hard to explain," Souders comments, "because the dependability and service-free history of the domestic refrigerator leads our customers to expect the same of a truck unit."

Leaks, Moisture Infiltration Are Major Service Problems

Leaks and resultant moisture infiltration represent the major service problems with truck units, and these result from road shock and vibration, he explains.

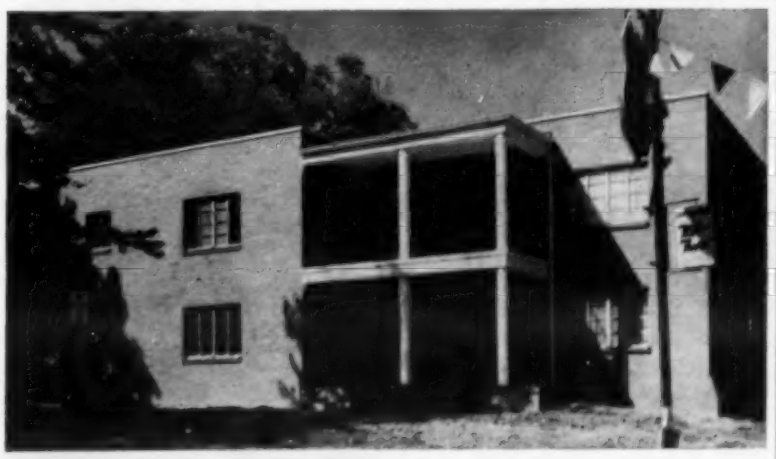
To explain such things and generally promote better appreciation of truck refrigeration problems and solutions, Illinois Auto Electric conducts frequent schools for users and servicemen.

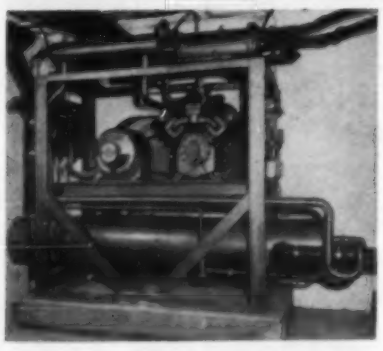
"We have as many as 40 in these classes," says Souders.

Good Service Termed Vital

Good service is vital in selling truck refrigeration, he emphasizes. With the meat packer customers of Illinois Auto Electric having trucks in use in all parts of the country, the firm's service operations can be widespread.

On occasion the company has sent servicemen to distant points, but generally its service (outside the Chicago area) is performed by local agencies under previously made arrangements.





Schnacke Thermatrol Water Chiller Chosen for Folsom Apartments

Schnacke Thermatrol Chilled Water Unit Model CFD-15-35 is integrated with hot water boiler for summer-winter air conditioning of the Folsom Apartments, Boonville, Indiana. Thermatrol package chillers are available in sizes from 10 to 60 tons, at 35° and 40° in standard models. The "S" line offers specification design to meet any requirement, easily selected to fit the job.

Write for complete engineering data. **SCHNACKE, INC.** 1105 Governor St. Evansville, Ind.

• LIQUID RECEIVERS • CAPILLARY VALVES • EVAPORATORS • WATER-COOLED CONDENSERS •

It's STANDARD for QUALITY PERFORMANCE CAPACITY

STANDARD REFRIGERATION CO.

932 S. Hoyne, Dept. C Chicago 12, Ill.

WRITE FOR OUR NEW CATALOG

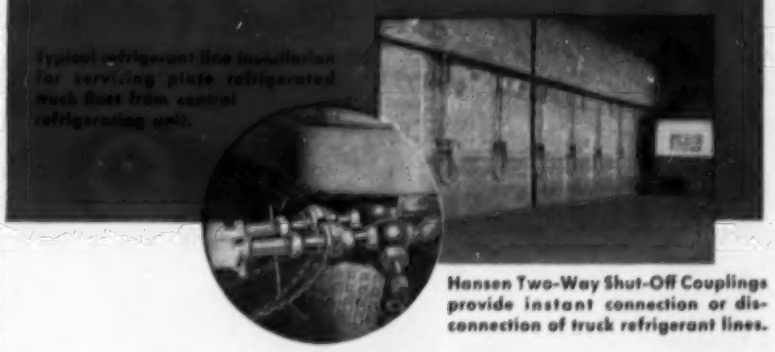
In the Dairy Industry, too—

TO PROVIDE INSTANT CONNECTION AND DISCONNECTION OF TRUCK REFRIGERANT LINES

HANSEN

QUICK CONNECTIVE SERIES H K

TWO-WAY SHUT-OFF COUPLINGS



Hansen Two-Way Shut-Off Couplings provide instant connection or disconnection of truck refrigerant lines.

● On almost a countless variety of applications, Hansen Series HK Couplings provide instant connection and disconnection of fluid lines, eliminate costly delays—save time, effort and money.

To connect, you merely pull back sleeve and push Plug into the Socket. To disconnect, just pull back sleeve. This disconnects Coupling—automatically seals both ends of line with practically no spilling of liquid or escape of gas.

Hansen Series HK Two-Way Shut-Off Couplings are available with female pipe thread connections from ⅛" to 1" inclusive. Available in brass or steel.

Also Straight-Through and One-Way Shut-Off Couplings. Write for Catalog.

REPRESENTATIVES IN PRINCIPAL CITIES

SINCE 1915 QUICK-CONNECTIVE FLUID LINE COUPLINGS

THE HANSEN MANUFACTURING COMPANY

4031 WEST 150th STREET • CLEVELAND 11, OHIO

NARDA Reports Net Profit Ratio to Sales Rises to 3.4% for 1955

Dealers Hit 10-Yr. Low In Goods' Cost Sold with Peak Gross Margin of 34.3%

This yearly Cost-of-Doing-Business Survey conducted by the National Appliance and Radio-TV Dealers Association permits dealers in all types of products to compare their operating cost ratios with those of other dealers. Most of the data is presented in tabular form for easy reference.

CHICAGO — That appliance-television retailers were operating at a higher degree of efficiency last year than in previous years was indicated by results of the 1955 costs-of-doing-business survey conducted among members of the National Appliance & Radio-TV Dealers Association.

Among evidence of this new dealer effectiveness were:

The largest net profit ratio since 1950, 3.4%.

Increase in dollar sales volume of reporting dealers by 10.1% over 1954. (This contrasts with the 4% increase of all dealers in the industry).

Inventory turnover of 5.5 times for 1955, a new high since the beginning of this continuing survey in 1946.

A ten-year low in cost of goods sold for 1955 or 65.7% of net sales and a corresponding peak gross margin of 34.3%.

$91 sales per square foot of selling space, up $6 from the 1954 figure.

Table 1—Appliance Sales Breakdown by Product Type

Appliance	Per Cent of Total Sales 1955	1954	1953
Total	100.0	100.0	100.0
TV, radios, and record players	28.8	35.6	39.2
Washers	18.6	13.6	14.8
Refrigerators	17.9	17.9	16.7
Freezers	7.9	3.6	2.8
Ranges—Total	7.0	8.3	8.3
Electric	5.1	4.9	4.9
Gas	1.9	3.4	3.4
Dryers	4.4	3.3	2.9
Kitchen equip.	2.5	2.6	4.3
Air Conditioning	2.0	3.7	2.5
Vacuum Cleaners	1.1	1.1	1.1
Other major appliances	6.1	4.8	3.8
All small appli.	3.7	5.5	3.6

Survey data was compiled and analyzed by consulting economist Richard E. Snyder of Chicago.

63% of Dealers Surveyed See Higher Sales In '56

Seventy per cent of the dealers participating in the survey gave specific indications of their sales prospects for 1956 by comparison with 1955. Of this group, 63% anticipated higher sales, the average expected increase being 14%; 17% expected no change in sales volume; and the remaining 20% foresaw sales declines, averaging 13%.

51% Look for 15% Profit Rise

Only 59% of the dealers ventured specific estimates as to the degree of change in their profits this year. Within this group, 51% looked for an average profit rise of 15% over 1955; 28% believed that 1956 profits will show no change; and 21% expected profits to decline, by 14% on the average.

Laundry equipment was expected to show the best sales record of all the dealers' product lines in 1956, especially dryers. Television ranked second, refrigerators third, air conditioners fourth, and ranges fifth.

Kitchen equipment, freezers, and hi-fi and phonograph equipment were next. Dishwashers, radios, vacuum cleaners, and space heating were also mentioned.

Among product lines getting special promotion this year are air conditioning, kitchen equipment, dishwashers and dryers, built-in appliances and color TV, automatic laundry equipment, hi-fi, freezers, ranges, heating equipment, and water heaters.

Asked whether they plan to hire additional salespeople in 1956, 52% responded that they did, averaging only one or two; 48% responded that they did not.

Products the dealers will handle outside of radio-TV and appliances are: commercial air conditioning, furniture and floor coverings, kitchen cabinets, power mowers, hardware, sporting goods, music merchandise, luggage, non-electric housewares, gift items, plumbing and heating, auto seat covers, and aluminum awnings, it was said.

In response to a question on dealer plans for effecting economies this year, most told of plans to concentrate their advertising more, reduce office personnel, fine down their operating costs, buy more astutely, improve service efficiency, streamline sales forces, cut delivery expense, step up salesmen's productiveness, reduce supervision costs, and cut back on service on equipment sold by others.

Noting that there were important shifts in product sales

(Continued on next page)

Table 2—Trade-In Per Cent to Unit Sale of Key Items

Appliance	% of Sales Accompanied By Trade-Ins 1955	1954	1953	1952	1951	1950	1949	1948	1947
Refrigerators	70	66	68	69	56	42	35	18	11
Washers	70	68	65	62	52	49	41	27	19
Ranges	55	58	60	50	40	36	26	16	9
Vacuum Cleaners	36	35	32	31	28	36	31	22	26
Television	38	29	27	17	15	13	....	....	....
Dryers	10	....	....	....	....	....	....	....	....
Freezers	8	....	....	....	....	....	....	....	....
Air Conditioners	9	....	....	....	....	....	....	....	....

Table 3—National Operating Ratios for 1955 and Previous Years

Line	Item	National Averages 1955	1954	1953	1952	1951	1950	1949
1.	Net sales (merchandise plus service)	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1-a.	Net sales (merchandise only)	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2.	Cost of goods sold (merchandise plus service	65.7	66.0	67.1	68.0	68.8	69.2	67.2
2-a.	Cost of goods sold (mdse. only)	68.4	68.8	70.2	69.8	70.3	69.7	68.8
3.	Gross margin (mdse. plus service (Line 1 minus line 2)	34.3	34.0	32.9	32.0	31.2	30.8	32.8
3-a.	Gross margin (mdse. only) (Line 1-a minus line 2-a)	31.6	31.2	29.8	30.2	29.7	30.3	31.2
4.	Total operating costs (A through E below)	30.9	31.4	30.6	28.8	28.3	24.8	27.6
	A. Administrative	22.2	22.3	21.2	20.6	20.4	16.9	19.1
	(1) Owners and/or managers remun.	3.2	3.8	3.4	3.6	4.1	3.6	3.5
	(2) Office salaries	2.4	2.2	2.2	2.1	1.6	1.5	2.0
	(3) Salesmen's pay	7.2	6.0	5.6	5.7	5.6	4.8	5.5
	(4) Servicemen's wages and expenses	5.2	5.5	6.0	5.1	5.7	4.5	4.7
	(5) Vehicle expense	2.7	2.9	2.4	2.4	1.8	1.4	1.7
	(6) Other administrative Expenses	1.5	1.9	1.6	1.7	1.6	1.1	1.7
	B. Occupancy expense	2.8	2.9	2.5	2.5	2.5	2.6	2.6
	C. Advertising expense	2.5	2.5	2.5	2.6	2.7	2.2	2.5
	D. Bad debt losses	0.4	0.3	0.4	0.2	0.1	0.3	0.2
	E. All other expenses	3.0	3.4	4.0	2.9	2.6	2.8	3.2
5.	Net operating profit (line 3 minus line 4)	3.4	2.6	2.3	3.2	2.9	6.0	5.2

Table 4—Special Analysis of Expense Detail

	Ratios to Net Sales 1955	1954	% of Total Expense 1955	1954
Total personnel, operating expenses and losses	30.9	31.4	100.0	100.0
Personnel Expenses	19.7	19.2	63.4	61.1
a—Owners and/or managers salaries	3.2	3.8	10.1	10.8
b—Office salaries	2.0	1.8	6.5	6.0
c—Salesmen's pay	7.2	6.0	23.3	19.6
d—Servicemen's wages and expenses	5.2	5.5	17.2	17.9
e—Deliverymen's and warehousemen's wages	1.7	1.7	4.9	5.6
f—Employer's share social security and unemployment compensation	0.4	0.4	1.4	1.2
Operating expenses	9.3	10.2	30.2	32.7
g—Light and heat	0.5	0.5	1.5	1.6
h—Janitor service	0.1	0.2	0.3	0.4
i—Rent	1.5	1.5	5.0	4.9
j—Property taxes, etc. on real estate	0.6	0.5	1.8	1.5
k—Vehicle maintenance	0.7	0.8	2.4	2.7
l—Advertising	2.5	2.5	7.9	7.9
m—Office supplies	0.4	0.3	1.2	1.1
n—Credit and trade information	0.04	0.05	0.1	0.2
o—Collection costs	0.06	0.05	0.4	0.2
p—Miscellaneous administrative expense	1.0	1.5	3.2	4.6
q—Taxes (except on property)	0.5	0.6	1.5	2.1
r—All other expenses	1.4	1.7	4.9	5.5
Losses	1.9	2.0	6.4	6.2
a—Building depreciation	0.1	0.2	0.4	0.5
t—Vehicle depreciation	0.3	0.4	1.1	1.1
u—Shop equipment depreciation	0.2	0.2	0.7	0.5
v—Trade-in losses	0.5	0.5	1.7	1.8
w—Bad debt losses	0.4	0.3	1.3	1.0
x—Interest	0.4	0.4	1.2	1.3

STAND-OUT

OPPORTUNITY to profit with ONE PRICED

INTERNATIONAL AIR CONDITIONER COVERS

made of Firestone Velon

32 STYLES TO FIT EVERY LEADING MAKE FROM ½ to 2 ton units 1951 to 1956 MODELS

Wherever an air conditioner stands out, there is an opportunity for you to sell a cover. Profit with the FIRST, THE FINEST . . . INTERNATIONAL COVERS . . . ALL AT ONE LOW PRICE. Made of long lasting, heavier gauge Firestone Velon. Write for the facts today!

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THERE IS A BROWNING ICE STORAGE BIN FOR EVERY MODEL AUTOMATIC ICE MACHINE

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CLB - 4 MODELS

SI - MODELS

Mr. Ice Machine Dealer:

SELECT PROVEN TOP QUALITY ALUMINUM OR STAINLESS STEEL

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CUSTOM — BUILT
ICE STORAGE BINS

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ATLANTA, GA.

INQUIRIES AND
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FOR

- AIR CONDITIONERS
- REFRIGERATORS
- FREEZERS and
- BEVERAGE COOLERS

Made By
UNIVERSAL MAJOR ELEC. INC.
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Including these Brands: Alsco; Ambassador; Armaid; Artkraft; Cooleraire; Cromwell; Hunter; Kalamazoo; Magicaire; Majestic; Orley; Perfection; Philharmonic; Plymouth; Presteline; Supremacy; U.S. Capitolaire.

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OVERSEAS OPPORTUNITY
IRAN
AIR CONDITIONING MAINTENANCE ENGINEER

Must be thoroughly experienced service and maintenance gas absorption air conditioning equipment.

Will be required to repair and assist in planning and establishing preventive maintenance programs for 3 ton—5 ton Servel units installed in residences and office buildings—oil field communities, South Iran.

Very attractive conditions for approximate 6-month contract.

— WRITE —

Giving age, education, marital status and details of experience.
BOX 308-C, Radio City Station, New York 19, N. Y.

For more information about products advertised on this page use Information Center, page 26.

Cost-of-Doing Business Study--

(Continued from preceding page) results last year (see Table 1), the report said:

TV-Radio-Record Player Combination Tops Sales

"Top sales rating for 1955 goes to the TV-radio-record player combination which accounted for 28.8% of the total. However, this was well below the 1954 share of 35.6% for that product group.

"Washers took over second place with 18.6% of the total (up strongly from 13.6 in 1954), dropping refrigerators to third when the latter's share remained unchanged from 1954 at 17.9%. (Washers did this once before, in 1951).

Freezers Jump To 4th Place

"Fourth place went to freezers which jumped their share of the total to 7.9% from 3.6 in 1954, displacing ranges which fell to fifth when their share declined to 7% from 8.3 in 1954. The gas range portion of the range total dropped sharply from 1954 while the electric range cut of the pie increased slightly by comparison with 1954.

"Dryers, with 4.4% of the total in 1955 compared to 3.3 in 1954, rose to sixth place. Kitchen equipment was in seventh place with a percentage of 2.5 against 2.6 in 1954.

Air Conditioning Sales Increase Dollar Volume

"Air conditioning sales in 1955, while increasing in terms of dollar volume over 1954, dropped to eighth place in the standings from fifth the previous year, rating 2% for the latest year against 3.7 in 1954," it was pointed out.

Chief Problems Cited

Principal operating problems reported by dealers in 1955 were price-cutting, builder sales abuses, back-door selling by distributors, curtailed discounts, promiscuous franchising, overproduction, false and misleading advertising, sales training problems, and the soft farm market.

In 1956 they expect most of these troubles to continue along with a shortage of good salesmen, increased wage costs, and a shortage of capital.

Regarding 1955 operating problems, Snyder said in the survey report:

"This analyst, who has handled the NARDA surveys for nine years, must confess to never before having seen dealer complaints about price cutting, by-pass selling, and shortened manufacturers' discounts couched in such strong language as that used in the latest survey returns.

"We cite the plaintive cry of one dealer, who sums up as follows: 'The (appliance) market has lost its prestige and now is a Barnum and Bailey Circus.'"

More 1955 sales of refrigerators involved trade-ins than any previous year (see Table 2) with 70% being reached, contrasted to 66% last year. Washers, too, reached a 70% figure this year, an all-time high. Ranges showed a decline, from 58% of sales having trade-ins to 55%.

Dryers, Freezers, Conditioners Included For First Time

Dryers, freezers, and air conditioners with trade-ins were introduced into the survey for the first time in 1955 and they show 10%, 8%, and 9% of total sales, respectively.

The survey disclosed that the aggregate dollar value of 1955 year-end inventories in the hands of NARDA dealers was 17.1% above the year's starting value. "This was the biggest inventory value increase within any given year, except 1950, since the surveys began."

Discussing highlights in the 1955 national operating cost picture (see Table 3), the report stated, in part:

"*Net sales* (includes sales of merchandise and revenue from service): Merchandise sales in 1955 comprised 89.2% of the composite sales total and revenue from service accounted for the remaining 10.8%. In 1954 the respective comparative percentages were 86.8 and 13.2.

"*Cost of goods sold* (inventory at cost as of Jan. 1, 1955, plus purchases at cost during 1955, plus freight and delivery costs, minus inventory at cost as of Dec. 31, 1955):

"The total cost of goods sold ratio (merchandise plus service) in 1955 reached the lowest point on record in the 10 years of the NARDA surveys, dropping to 65.7% of net sales from 66 in 1954, the previous low. Moreover, it is noteworthy that this ratio has declined each year since 1950 when it registered 69.2, the record high.

"A. *Cost of goods sold—merchandise only:* The cost of goods sold ratio applying to merchandise only amounted to 68.4% of the *merchandise* sales dollar in 1955, or $68.40 of every $100 of merchandise sales. This was the second lowest merchandise cost of goods sold ratio in the 10-year history of the NARDA surveys.

"B. *Cost of goods sold—service parts and supplies:* These parts and supplies required 7.3% of total cost of goods sold in 1955 compared to 9.5% in 1954. The total dollar cost of service parts and supplies amounted to 44.5% of total revenue from service in 1955 compared to 47.7% in 1954.

"*Gross margin* (the difference between net sales and cost of goods sold): The total gross margin ratio (combining merchandise plus service) was 34.3% of net sales in 1955 compared to 34 in 1954. Thus the 1955 total GM figure became the 10-year high for the NARDA survey period having risen each year since 1950.

(Continued on next page)

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ANACONDA®

REFRIGERATION PRODUCTS

Dealer Operations Survey--

(Concluded from preceding page)

"A. *Gross margin on merchandise only:* The 1955 'merchandise only' gross margin at 31.6% of merchandise sale set a new high since 1947 when the reading was 32.2.

"B. *Gross margin on service function:* An acceptable measure of the gross margin realized on the average NARDA dealer's service function in 1955 is obtainable through the following formula: Revenue from service minus cost of service parts and supplies minus servicemen's wages.

8% Net Gross Margin On Service Functions

"Revenue from service in this case would be given a value of 100.0. Service parts and supplies were 44.5% of service revenue. Deducting this from 100.0, we obtain 55.5. Then, deducting servicemen's wages—which, as a per cent of service revenue, amounted to 47.5 in 1955—we obtain 8% as the net gross margin on the entire service function.

"This figure also serves as the net measure of the degree to which the over-all gross margin was affected by the service factor.

"Total operating costs (the sum of the operating cost ratios for all specific expense elements listed in the survey schedule): The total operating cost ratio in 1955 amounted to 30.9% of net sales, compared to 31.4 in 1954 which was, and remains, the high point for this ratio in the 10-year period of the NARDA surveys.

"Administrative costs: The total administrative cost ratio in 1955 rated 22.2% of net sales. In declining only 0.1 ratio points from the 1954 high of 22.3, this ratio was the second highest on the 10-year scoreboard.

"Net operating profit (obtained by deducting the total operating expense ratio from gross margin): The average net operating profit ratio for the NARDA dealers reporting in the 1955 survey was 3.4% of net sales.

3.4% Best Net Profit Since 1950

"This was the best net profit result shown since 1950 when the ratio was 6%. It represents a rise of 0.8 ratio points from the 1954 figure of 2.6 and an increase of 1.1 ratio points over the 10-year low of 2.3 recorded in 1953."

The NARDA survey schedule includes 24 specific expense items.

Table 4 provides a special analysis of these in two separate breakdowns, the first showing each element of expense as a per cent of net sales, and the second showing the percentage relationship of each to total operating expense.

16-City 'Controlorama' Fall Tour Opens In Indianapolis Sept. 13

GOSHEN, Ind. — Controlorama, an elaborate educational road show on automatic controls for heating, air conditioning and refrigeration, will premiere its fall tour in Indianapolis on Sept. 13. Penn Controls, Inc. announced recently.

It will show in 15 midwestern cities before winding up in Peoria, Ill. on Oct. 22.

Controlorama last spring toured 22 eastern and northeastern cities, and drew an attendance of nearly 10,000, smashing all previous attendance records set during the past 20 years.

R. H. Luscombe, manager of marketing for the Penn firm said, "Controlorama is a modernized and completely new successor to earlier control shows which Penn first pioneered in 1936.

"More emphasis is given to the rapidly expanding air conditioning market to meet the educational needs of engineers, wholesalers, dealers, and servicemen."

Controlorama is sponsored in each city by leading wholesalers, Luscombe said, who in turn issue invitations to all trade people in the area.

The fall schedule is as follows: Indianapolis, Sept. 13; Fort Wayne, Ind., Sept. 17; Chicago, Sept. 19 and 20; Milwaukee, Sept. 24; Madison, Wis., Sept. 25; LaCrosse, Wis., Sept. 27; Duluth, Minn., Oct. 1; Minneapolis, Oct. 3; Fargo, N. D., Oct. 5; Sioux City, Iowa, Oct. 8; Omaha, Oct. 10; Lincoln, Neb., Oct. 11; Des Moines, Iowa, Oct. 15; Cedar Rapids, Iowa, Oct. 17; Davenport, Iowa, Oct. 19; and Peoria, Ill., Oct. 22.

Biggest single feature of Controlorama is the use of "live" heating, refrigeration, and air conditioning systems operating panels which simulate actual operating conditions under various types of control situations.

In addition, wide screen color projection is used to supplement the story of automatic control told by animated charts and giant operating controls.

Controlorama starts at 5:30 p.m., local time, in each city, with both the heating and cooling presentations combined in one evening. A free dinner is served the audience and additional refreshments are provided after the program, Luscombe said.

The early starting time allows tradesmen and servicemen to attend immediately after working hours making it unnecessary to go home, eat, change clothes, and return for the show. Everyone is urged to come to Controlorama just as they are—directly from work.

The early starting time also permits the addition of a service roundup and question-answer session, which has proved beneficial on earlier Controlorama tours.

With intricate show equipment installed in a specifically designed truck, Penn Controls, Inc., has conducted its automatic control show in more than 120 U. S .and Canadian cities, playing before nearly 60,000 industry members involved in the usage, sale or servicing of automatically-controlled equipment.

Nelson To Reorganize, Retain Assets after Chapter II Filing

ST. LOUIS—N. O. Nelson Co., plumbing supply firm, recently filed in Federal district court a petition of reorganization under Chapter II of the Bankruptcy Act.

Federal Judge George H. Moore approved the Nelson petition to continue possession of the company's properties and assets, and referred the case for necessary further action to the referee in bankruptcy.

The Nelson company is a subsidiary of Automatic Washer Co., Newton, Iowa.

To permit the Nelson firm to reorganize its affairs "free from the harassment of creditors," John Chamberlin, Automatic Washer president, said the Nelson firm needs about $2 million to get it back on the right track.

The company's petition to the Federal court asks that it be allowed to continue possession of the properties and assets of the firm, and it set forth a proposed method of paying off creditors.

Included in this proposal, the petition said "debtor proposes to invoke the jurisdiction of the Federal court to assist it to recover from Bellanca Aircraft Corp. (which sold control of Nelson to Automatic Washer last March, and is now entangled in financial troubles with several firms) its note in the amount of $3,400,000 and to collect from Bellanca Aircraft Corp. all sums due to the debtor or its wholly-owned subsidiary."

In the announcement last March of its sale of N. O. Nelson to Automatic Washer, Bellanca noted it had acquired Nelson for about $4,850,000 and had received $3,466,800 in dividends from Nelson.

However, the Nelson dividend to Bellanca has not been paid and Charmberlin indicated it would not be paid until Bellanca's debts to Nelson are paid off.

As Chamberlin explained it, Bellanca owes approximately $4 million to Nelson while Nelson owes about $3.6 million to Bellanca in the form of dividends.

Thus the net debt owed Nelson is $400,000, which Chamberlin said he was fully confident would be paid.

Bellanca borrowed $3,428,000 from N. O. Nelson in anticipation of the dividend, according to Keith Munroe, president of the supply firm.

To obtain the money to lend to Bellanca, Nelson borrowed money from Walter E. Heller & Co. on accounts receivable, a mortgage, and on merchandise inventory loans, it was pointed out.

It is understood Bellanca needed the money to pay off a loan it made from Eastern interests to complete purchase of the Nelson company.

According to Munroe, Bellanca owes Nelson, in addition to the note for $3,428,000, about "half a million dollars" rather than the accounts receivable figure of $199,010.52 listed in the Nelson assets. He did not elaborate on the difference in the two figures.

Largest single unsecured debt owed by Nelson, it was reported, is one for $288,258.02 owed to Rheem Mfg. Co., Chicago air conditioning equipment producer.

Kentucky State Bldg. Cooled

PADUCAH, Ky.—The State's new $150,000 air conditioned office building here was opened and dedicated July 25.

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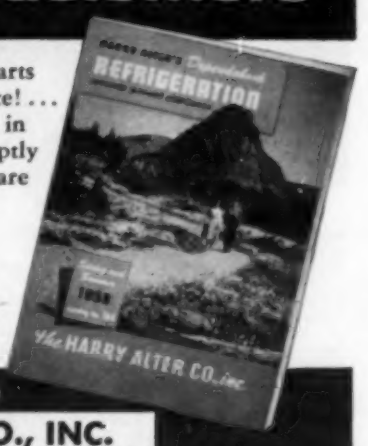

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For more information about products advertised on this page use Information Center, page 26.

L. J. ASPEN

M. H. PATNEAUDE

Sweden Names 4 As Firm Expands

SEATTLE — Two vice presidents, a secretary, and a treasurer have been appointed in the Sweden Freezer Mfg. Co. to keep pace with the expansion of the firm, Harvey F. Swenson, president, announced recently.

M. H. Patneaude, domestic sales manager, has been named vice president in charge of sales, with another vice presidency going to Ludvig J. Aspen, Seattle plant manager, who takes over the direction of all manufacturing.

In the other appointments, Charles L. Burton, export manager and sales manager of Sweden Freezer of Canada, Ltd., advances to secretary of the company and Carl E. Swenson, controller, becomes treasurer.

Sweden recently opened an assembly plant in Columbus, Ohio, and has made additions to the home office. It produces milk shake and soft ice cream machines, fountain equipment, and a fruit and vegetable juicer.

The new vice president in charge of sales, has been in the company's sales department for five years, the last three as domestic sales manager. Patneaude came to Sweden Freezer from the Mall Tool Co., where he was a branch manager in St. Paul, Minn., and Seattle.

Aspen was with the Boeing Airplane Co. for seven years before joining Sweden Freezer in 1946.

Prior to shifting to Sweden Freezer in 1946, Burton was chief purchasing agent in Seattle for a construction firm.

Carl Swenson joined Sweden Freezer in 1947.

Over 200 Suppliers To Participate In Soft Drink Exposition Nov. 12-15

WASHINGTON, D. C. — The 1956 International Soft Drink Industry Exposition will be held Nov. 12-15 in Cleveland's Public Auditorium, it was announced recently.

Thousands of bottlers and guests will attend the exposition to see what the nation's manufacturers and producers have developed for increasing the efficiency of production and distribution of bottled soft drinks, and for promoting the industry's progress. More than 200 suppliers are planning to participate in the show, it was reported.

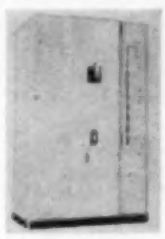
The exposition has been sponsored annually since 1921 as an industry activity by the American Bottlers of Carbonated Beverages, national association of the soft drink industry.

"During that time the production of soft drinks has soared from 4½ billion bottles per year to more than 30 billion bottles, with a per capita consumption of 184.2 per person," the association noted.

"By 1960 it is estimated that the per capita consumption will be 200 bottles per person."

LaCrosse Vendors Get Fruit Firm Ok

LA CROSSE, Wis.—La Crosse Cooler Co. announced its complete line of vendors has been fully approved for use by Nesbitt Fruit Products, Inc., of Los Angeles.



Nesbitt has laid special emphasis on the La Crosse "Bev' Serv 12" upright, a coin-operated selective vendor designed for heavy traffic locations with limited floor space, it was said.

"Bev' Serv 12" requires no plumbing connections and dispenses 108 six, seven, or eight-oz. bottles with pre-cooling space for 36, it was added.

Character Refrigerators Opens Florida Office

NEW YORK CITY—"Character" Refrigerators Co. here, manufacturer of "Full Vision, Air Conditioned" florists' display refrigerators, has announced the opening of a Florida office at 225 E. Princeton St., Orlando.

H. M. Alpert has been appointed field representative for Florida and southern Georgia. For the past 15 years, he serviced the entire metropolitan New York area.

Other field representatives will be named in additional key markets, it was stated.

Carbonic Sales & Service Becomes Corporation

DALLAS—Carbonic Sales & Service Co., which has operated in the past as a partnership, has recently become a corporation under the same name.

The former partners are now officers of the new corporation as follows: Jack Chamberlain, president; Aaron A. Pinson, vice president; and Arthur J. Kamp, Jr., secretary-treasurer.

New address of the refrigeration equipment distributorship is 1715 S. Ervay St. Telephone number is HA 1-1711.

Federal Will Expand Belleville Capacity

WAUKESHA, Wis. — Contracts have been let to expand the facilities of Federal Refrigerator Mfg. Co.'s Belleville plant, more than doubling its capacity, it was announced recently by John Romadka, president.

A steadily increasing demand for Federal commercial refrigeration equipment was given as the reason for the added production facilities.

The planned expansion will make the Belleville plant completely self-sufficient as a manufacturing facility. To date, it has served as an assembly plant with fabricating and painting handled at Waukesha.

According to Romadka, shipments of Federal products are running about 25% ahead of 1955, a near-record year. The company is now shipping to all sections of the United States and has developed a considerable export market.

Headquarters for the entire Federal operation will remain in Waukesha.

Pattermann Elected Dunhill President

BROOKLYN — Karl Pattermann, former vice president and treasurer, is now president of the Dunhill Soda Fountain Corp. here. Charles Pecorella, former president, has resigned from the firm due to prolonged illness.

Pattermann

Carl Thaw, former secretary, becomes secretary-treasurer of the Dunhill Soda Fountain Corp., it was announced.

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Silencing is more than just *incidental* and *partial* with Heat-X 'OSM' Oil Separator-Mufflers. These units were *specifically engineered* to completely silence all system noises and absorb all pulsations from the compressor . . . *in addition* to separating entrained oil.

And these "all-in-one" units make float troubles a thing of the past. 'OSM' Oil Separator-Mufflers have *no floats* to hang open or stick closed. Instead, units incorporate a positive action Velocity Pressure Mechanism, *exclusive with Heat-X,* which opens only when compressor is running . . . closes of its own weight when compressor stops.

Ratings based on *tonnage, not horsepower,* permit close matching of unit to requirements . . . eliminate need to buy more than required capacity.

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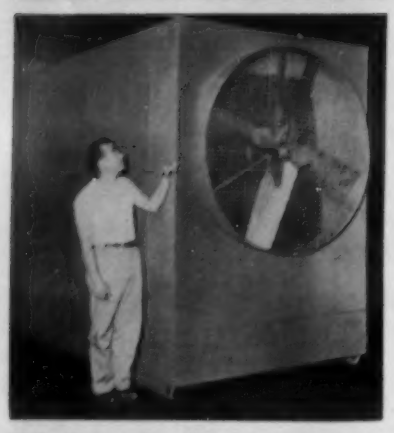


75-Ton Cooling Tower Offered by Halstead

KEY NO. F-820

PITTSBURGH—The size range of Halstead & Mitchell cooling towers has been extended to include 75-ton units, it is announced by Horace I. Schmidt, general sales manager.

Like all Halstead & Mitchell cooling towers, the new 75-ton units will be covered by H & M's exclusive 20-year guarantee on the wetted deck surface against attack by rotting or fungus growth.

The wetted deck wood is pressure creosoted and the more than 153 elements toxic to fungi in the creosote give specific assurance of long life, Schmidt said.

The 75-ton cooling tower uses a four-blade, slow-speed, zinc-plated and chromate-dipped fan. Fan shafts are made of stainless steel.

Three protections are used on the steel cabinet to eliminate rust. Hydraulically applied to force the paint into every opening, the "Vinsynite," "Vinyl Zinc," and chlorinated rubber paints provide a completely bonded coating.

Home Ice Crusher Retails for $29.95

KEY NO. F-821

KANSAS CITY, Mo.—What is reportedly the first portable electric ice crusher for the home was unveiled recently by Rival Mfg. Co. here. It will retail for $29.95.

Ready to plug in, the new "Ice-O-Matic" is complete in one unit. "It is light and easy to handle as a portable radio; it takes no more room than a toaster," the firm said. "No attachments are needed."

"The Ice-O-Matic's new crushing principle permits an infinite selection of crushed ice in any size from extremely fine to nugget-coarse," it was pointed out.

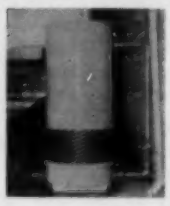
Completely automatic, the Ice-O-Matic has a white, one-piece molded case, chrome trim and controls, and a "unique" seamless built-in drawer that receives the crushed ice output.

"Precision sharpened, stainless steel talons do the heaviest crushing job yet the motor turns almost silently. Cubes are crushed instantly. The unit has a safety-feed door."

Koch Introduces Induced-Draft Tower

KEY NO. F-822

WICHITA, Kan.—Koch Engineering Co. here has introduced a new fanless, induced-draft cooling tower for air conditioning.



Air movement and cooling are accomplished by a system of nozzles at the top of the tower. These nozzles, spraying downward, perform two functions. The downward jet of water causes movement of a large volume of air through the tower, and the spray nozzles atomize the water into minute particles, permitting a better mixing of air and water, thus providing the greatest possible amount of cooling.

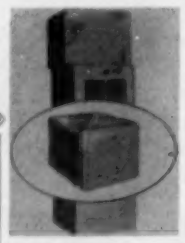
Additionally, this atomizing process eliminates wood fillers and baffles, the company said. The use of a new plastic coating inside and out assures protection to all metal surfaces.

The Koch "Carefree" cooling tower may be installed in any location convenient to water connections from the air conditioner.

Cooling Unit Combines With Existing Furnace

KEY NO. F-823

LOS ANGELES—Utility Appliance Corp. announces a new line of air-cooled air conditioning units for installation with existing forced air furnaces.



Consisting of a condensing unit, evaporator, and tubing, all of which are precharged and packaged at the factory, the units are designed for every type of forced air installation, including horizontal and counterflow furnaces.

Featuring extra-large blowers for a quieter and larger volume of air moving, the condensing units come in four sizes: Economy 2-Ton; Full 2-Ton; 3-Ton; and 5-Ton.

The Economy-2 contains a 12-in. blower; the 2-Ton and 3-Ton contain a 16-in. blower, and the 5-Ton has a 19-in. blower. A Tecumseh compressor is utilized in the condensing unit, which contains "extra-large" condenser coils.

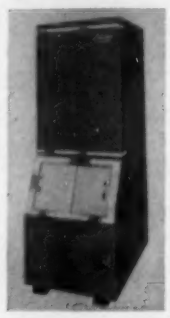
Utility's ⅝-in. lines are precharged and tubing comes in 20, 30, and 50-ft. lengths. Other features of the condensing unit include: rubber resilient-mounted motor and bearings which need no oil. It is constructed of galvanized sheet metal, completely Bonderized and coated with special weather-resistant outdoor paint.

The evaporator unit comes in 2, 3, and 5-ton sizes. Cased in galvanized and Bonderized metal, the cabinet is insulated. For horizontal furnaces the evaporator unit has a built-in double drain pan designed for FHA and V.A. approval.

Add Automatic Chipper To 'Ice Boy' Line

KEY NO. F-824

BELOIT, Wis.—Lipman Div. of Yates-American Machine Co. announced recently that it is adding an automatic "Chipper" to its "Ice Boy" line of ice makers.



The new machine is claimed to produce ice particles that "retain their original form and have a longer-lasting cooling effect."

The company said the Chipper is built around the proven control system of other Ice Boy models. Its ice product is said to be an innovation.

R. T. Hansen, national sales manager of the Lipman Div., stated that the new ice from the Chipper "is crystal-clear, diamond-hard. It has sufficient body to last longer in beverages and around food displays. With it, a large new market is opened to our dealers."

A capacity of 260 lbs. of ice production in a 24-hour period is claimed for the machine, the LC-80. The insulated steel cabinet with gunmetal mottletone finish is 36 in. high, 24 in. wide, and 25½ in. deep. An optional storage bin which fits beneath the Chipper stores 250 lbs. of ice.

Production of the new Ice Boy was scheduled for the last of July, with a national program of "Ice Reviews" planned simultaneously at dealer showrooms throughout the country on Aug. 10, 11, and 13.

'Freon' Powered Horns Provide Vacation Safety

KEY NO. F-825

LOS ANGELES—Miniature "Freon"-powered horns will make traveling this summer safer for hunters, fishermen, and boating enthusiasts.

The Refrigeration Dept. of American Potash & Chemical Corp. is supplying "Charg-A-Can" containers of "Freon-12" for an expanding market demand for the series of alarm horns manufactured at the Summit, N. J., plant of the Falcon Alarm Co., Inc.

One of these units, weighing less than a pound and a half, makes a 110-decibel warning sound which can be heard more than 1,000 ft. The horn will provide up to 300 two-second blasts from each Charg-A-Can of "Freon."

The horns also are used in fire protection systems and as indoor auxiliaries to air-raid alarm systems.

Information Center

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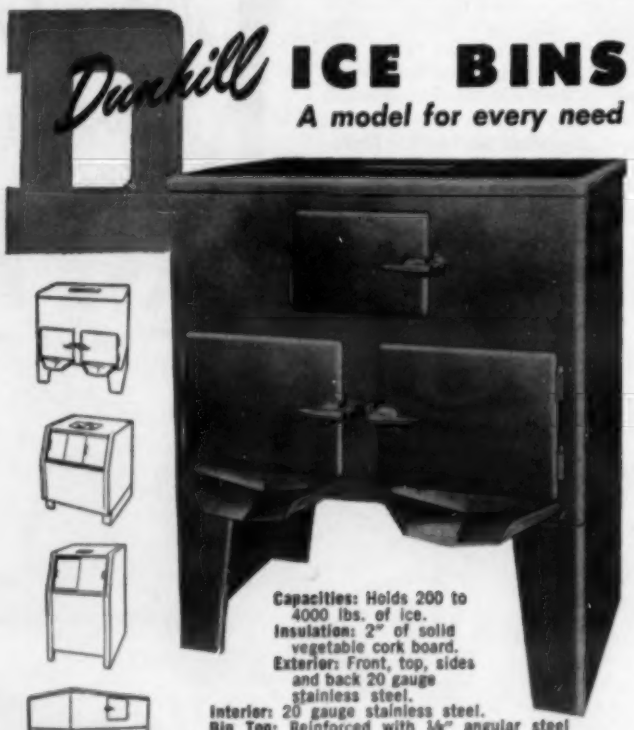

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Offer Combination Draft Inducer-Regulator

———KEY NO. F-826———

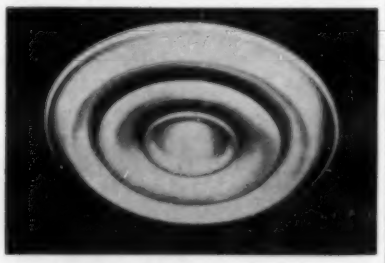
ST. JOSEPH, Mo.—A new combination draft inducer-regulator was recently developed by Walker Mfg. & Sales Corp.

Called the "Shur-Flo," the unit is adaptable to oil, gas, stoker, and hand-fired installations. It inspirates draft immediately in flue or chimney where natural draft is deficient, the company claims, and it corrects troubles caused by faulty chimney construction.

Once draft has been established by an inducer fan, the firm continued, it is held at maximum combustion efficiency by an automatic regulator. Chimney is kept dry, pulsation, and smoking are corrected, soot and odors stopped, it was added.

Made of heavy-gauge galvanized steel, the unit has a heavy-duty, fractional hp. motor said to consume little current. It is located so it is shielded from heat. Regulator and inducer fan are both constructed of corrosion-resistant material.

The Shur-Flo is available for pipe sizes 4 through 10 in.



Titus Introduces 3-Cone Diffuser

———KEY NO. F-827———

WATERLOO, Iowa—An adjustable-on-the-job, economy model ceiling diffuser has been announced by The Titus Mfg. Corp. here.

Called the model T-1, this new three-cone diffuser is an addition to Titus' new line of ceiling diffusers and accessories.

The company claims the T-1 diffuser "combines the top quality features, attractive styling, and high diffusion efficiency of much more costly units with modest pricing.

It features, the same exclusive Titus' Curved Contour Cone construction found on Titus four-cone ceiling diffusers."

The diffuser is simple to install and no special tools are needed, according to Titus.

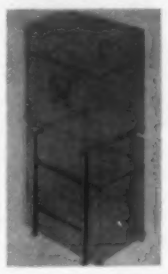
"An ingenious spring lock arrangement permits quick, easy removal or installation of the inner cone assembly," the company said. "It is adjustable—on the job—to two different air patterns by simply changing screws on the inner cone assembly. A heavy-duty sponge gasket around outer edge of diffuser assures air-tight installation."

For exposed duct or flush mounting, the diffuser is available in all standard sizes with a complete line of Titus accessories, according to the firm.

Paltier Adds Portable Steel Storage Rack

———KEY NO. F-828———

MICHIGAN CITY, Ind.—Paltier Corp. here recently introduced a new all-steel, portable storage rack for stacking packaged goods three or four high.



Claimed to offer the lowest cost per foot storage of unitized loads on pallets or skids, the portable rack permits both flexible and efficient operation with nearly any type of lifting equipment. It permits selection of any unit load, is set up or knocked down, without use of bolts. Crossbars and uprights are slip-fit.

Kelvinator Washer Ends Scrubbing, Soaking

———KEY NO. F-829———

DETROIT — The "Magic Minute," an automatic pre-treatment that eliminates hand scrubbing and soaking of clothes with ground-in dirt, highlights all six models of automatic washers in the 1957 Kelvinator home laundry appliance line introduced recently by Kelvinator Div., American Motors Corp.

The line also includes five automatic electric dryers, six wringer washers, and an ironer.

The Magic Minute is part of the washing cycle and requires no special attention once the washer has started, explains W. L. Hullsiek, sales planning manager for laundry products.

Water flow into the tub is halted after several minutes. The non-reversing eccentric agitator starts, giving each load of soiled clothes a full minute of pre-treatment in a highly concentrated solution of detergent or soap.

The agitator continues to operate when the Magic Minute is

completed. Water flow resumes until the tub reaches load level. The washer automatically continues through all phases: wash, spin, rinse, and damp dry.

While all models have the Magic Minute, the top three also feature two separate cycles, for family loads or fine fabrics; and push-button temperature selection of rinse and wash waters.

In addition, the models WAG-9 and WAG-9S have a "Do-All" dial and are available in three exterior colors and white. The WAG-9S is equipped with suds return.

Greater speed in drying marks the line of automatic clothes dryers. The new models will fluff dry an 8-lb. load in 34.2 minutes, just about the same time as the 35-minute regular load cycle in the automatic washer.

The top-of-the-line model DEG-9 matches the top automatic washers. It, too, has Do-All dial and is available in three colors and white.

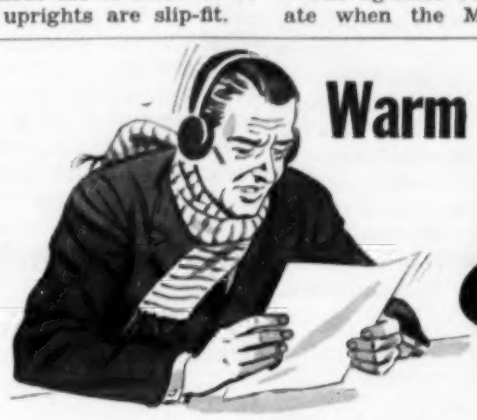
Delta Fiber Duct Lined with Aluminum

———KEY NO. F-8210———

CHICAGO — Delta Co. here is now marketing an aluminum-lined fiber air duct.

Body of the duct is constructed of long jute fiber kraft plys. Each ply is bonded with waterproof adhesive in addition to the outer ply being asphalt saturated.

Delta "Air Duct" fits all standard metal elbows and tees, and is for radial and lateral systems.



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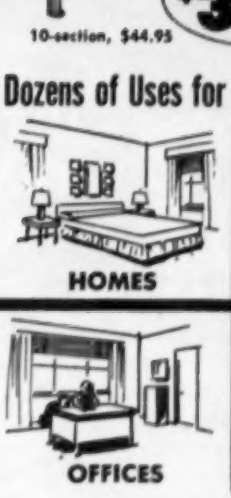

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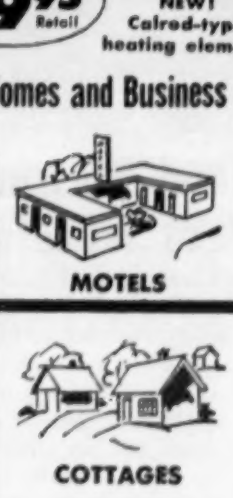

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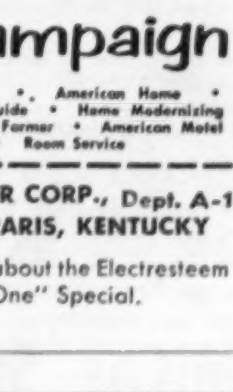

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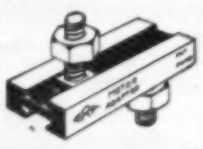

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Servicing Weathertron Heat Pumps (6)

Originally just a theory and for many years subject only to occasional experimental installations, the heat pump of late has developed into a practical and expanding business.

It's future was never brighter.

Design, manufacturing, sale, installation, and service of the heat pump have already become important factors in the air conditioning industry, and are bound to grow.

In recognition of the present stage of development, and the expected future, the NEWS is presenting herewith a series of articles on servicing a specific make of heat pump—the General Electric air-to-air "Weathertron."

This installment continues the discussion of Test and Adjustment.

Capacitors and Capacitor Switching Relay (Single Phase Only

Start capacitors (CS) and run capacitors (CR) are used in the single phase motor compressor. They are located on the rear of the control box (Figs. 5 and 8). A bank of two 108 m.f. start capacitors and seven 10 m.f. run capacitors are used in the WT-44C1 and two 85 m.f. start capacitors and seven 10 m.f. run capacitors are used in the WT-66C1.

TWO START CAPACITORS

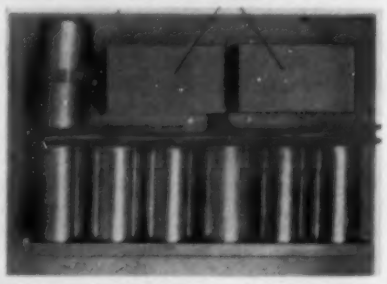

FIG. 8—Capacitor rack for single phase Weathertron unit. There are two start capacitors and seven run capacitors.

The capacitor switching relay (CSR) is used to cut the starting capacitors out of the system when the motor-compressor comes up to speed. It is located on the single phase control panel (Fig. 6).

The voltage across the start winding rises with the motor speed and the voltage relay is set to pick up at a predetermined voltage (which is a direct indication of speed) thereby breaking the start circuit.

Two types of failures can be observed in capacitors. These are open and short circuits.

(a) If the start capacitors fail open or shorted, the motor compressor will not start and will kick out the overload.

(b) If any of the run capacitors fail shorted, the compressor will kick out on overload. If they fail open the compressor will run and the capacitor current will be (while running) 1 to 1½ amps. lower (for each capacitor that fails) than would be expected under normal running conditions.

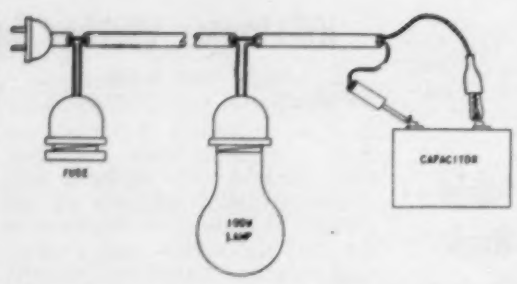

FIG. 9—Test lamp can be employed to check both run and start capacitors.

This amperage should be checked at each common wire which runs from the run capacitors to the start relay with a snap-on type ammeter around lead on front of control panel. The normal capacitor running circuit is between 8½ and 9½ amps.

One method of checking run capacitors is to unsolder them one at a time checking the capacitor amps. as they are unsoldered. A drop in current should be observed each time a good capacitor is unsoldered and no drop will be observed when a bad one is unsoldered.

Caution: Never touch capacitor terminals during operation as there is approximately 350 to 400 volts present. Always short between capacitor terminals (upon stopping unit) before working on them or voltage relays (CSR).

A method to check start capacitors or another method to check individual run capacitors is to unsolder leads and connect test leads from ohmmeter to capacitor terminals. The run capacitors are lower capacity and ohmmeter needle should move to 0 and then slowly charge to 20 megohms (this is very close to the highest reading on the normal meter). If capacitor is open, needle will not move. If short circuited, needle will show 0.

Start capacitors have the large rating and when connected to ohmmeter the needle will move to 0 and *very* slowly charge to 30 megohms. If open or shorted, needle will act as previously.

If an ohmmeter is not available a valuable aid can be made up as shown in Fig. 9. This shows how the test cord is used to check a run capacitor. If this capacitor is good, the lamp will slowly light up to a dull glow. If the lamp lights to full brilliance the capacitor is shorted or if it does not light the capacitor is open circuited.

The start capacitor cannot be checked this way since the capacity is high enough to light the lamp practically to full brilliance. Instead, follow this procedure:

(a) Connect test light as in Fig. 9. If the lamp lights the capacitor is not open circuited.

(b) Connect as in Fig. 9 and when lamp lights, remove leads from capacitor and short circuit the capacitor terminals with an insulated screwdriver. If a spark occurs the capacitor is not short circuited internally. It may be necessary to repeat this check since it is possible to open the circuit at exact instant that the AC voltage passes through 0 and thus the capacitor will not be charged.

As a service hint, it would be advisable to carry an extra capacitor assembly in the service truck, replace capacitors on the job, and then check individual capacitors in the shop.

Junction Box

The power supply is connected to the Weathertron in the junction box through the top of the unit. The junction box is located in the upper right hand corner of the Weathertron. For the three phase units only (WT-44C2 and WT66C2) the junction box has installed a fuse rack with three 60 amp. time delay rated fuses which fuse the supplementary heaters.

Pressure Switches

Two pressure switches are mounted on the indoor gas line, directly above the control panel. NOTE: These switches are factory set and should not be adjusted by the serviceman.

Hi-Lo Pressure Cutout

The hi-lo pressure cutout (HLCO) is a standard safety switch, the purpose of which is to protect the refrigeration cycle from any abnormally high or low internal pressures. The pressure line from the switch is connected in the common discharge line from the compressor.

The low pressure cutout contacts (normally closed) are set to open at 10 ± 2 p.s.i. and close at 20 ± 5 p.s.i.

The high pressure cutout contacts (normally closed) are set to open at 360 ± 2 p.s.i. and close at 310 ± 5 p.s.i.

Override Control Switch

The override control switch (ORCS) is pressure operated, sensing the pressure in the outdoor gas line. This line is connected to the high side during the cooling cycle and on the low pressure side during the heating cycle.

The function of the override control switch is to position the override solenoid valve. De-energizing this solenoid will produce override action. At outdoor temperatures at 100° F. the head pressure approaches the high pressure cut-out point. The override capillary introduces an additional restriction in the refrigerant circuit and reduces the head pressure.

The capillary is normally by-passed by means of the override solenoid valve which is open when energized. When the head pressure rises above approximately 345 p.s.i. (WT44C) or 326 p.s.i. (WT66C) the override control switch opens, de-energizing the override solenoid.

Refrigerant flow is directed through the override capillary which results in a drop in head pressure. This will cause the override control switch to close about 310 p.s.i. (WT44C) or 301 (WT66C), energizing the solenoid thereby by-pass the override restriction.

Therefore as long as the outdoor temperature maintains the head pressure within the range of the override control switch, the override capillary will cycle in and out of the circuit.

(To Be Continued)

Pictured here: An actual user of Ultra Solvex

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For more information about products advertised on this page use Information Center, page 26.

Better Business Bureau Warns Public To Guard Against Furnace Repair Gyps

NEW YORK CITY—The National Better Business Bureau has issued a release to the press cautioning the public to be on guard for furnace repair gyps who are active during the summer and early fall, when furnaces are not in use.

Kenneth B. Willson, president of the bureau, states in the release:

Typical Version of Furnace Racket

"In a typical version of the racket, the unscrupulous repairman will ring the homeowner's doorbell — frequently during the daytime when the man of the house is away—and state that 'he just happens to be in the neighborhood' and has 'just completed some other furnace repair work nearby.'

"He states that, while he and his associates are in the area, they are willing to undertake a complete inspection of the homeowner's furnace, with absolutely no obligation of any sort to the homeowner."

Once the repairman secures access to the basement, Willson stated, he dismantles the entire furnace, and then states that it is in extremely dangerous condition and is unrepairable. By the use of such "scare" tactics, the gyps frequently succeed in getting the homeowner to sign a contract for an entire new heating plant.

Pose as Inspector

In some instances, gyp furnace repairmen may pose as "official inspectors," or representatives of governmental or civic groups, in order to secure access to the homeowner's furnace for the purpose of dismantling it.

In other instances, the gyps will take the furnace apart for the purpose of "cleaning" it, and will then call in a fake "heating engineer," who is in reality a party to the hoax, to look over a defect they have allegedly discovered. This fake engineer will give his opinion that the furnace is dangerous and unrepairable.

Pointing out that most homeowners are not qualified to diagnose accurately the problems that may arise in connection with their heating equipment, Willson cited the following rules as guides to the homeowner in taking proper care of heating equipment and avoiding the small minority of gyp artists in the field:

How To Avoid Getting Fleeced

(1) Establish contact with a dealer in whose reliability and integrity you have complete confidence. If in doubt, a check should be made with the Better Business Bureau.

(2) Have your furnace serviced regularly by a serviceman of known reliability. Have your servicing done when the furnace is not needed so as to avoid hasty decisions later on when you cannot get along without your furnace.

(3) Request the credentials of anyone who represents himself as a "furnace inspector." Governmental and civic authorities will carry complete identification.

(4) Beware of the itinerant repairman who says that he "just happens to be in the neighborhood" and will perform services free or for a very modest cost.

(5) *Never permit anyone* to have access to furnaces and heating systems before you have satisfied yourself completely regarding the authenticity and integrity of the firm or individual involved.

(6) Give the purchase of a new furnace the same prudent consideration involved in making any major purchase. Hasty action should not be taken. Estimates should be secured.

(7) Seek corroboration of allegations that your furnace is beyond repair, through a qualified heating engineer.

(8) Secure competitive bids on major repairs or replacement of heating equipment. Be ware of unusually low bids.

(9) Refuse to do business with any firm that employs high pressure "scare tactics" in order to make sales.

(10) Refuse to do business with any firm that engages in "bait" advertising of furnace repairs and service.

Don't Sign 'Til You Are Sure

(11) Read and understand thoroughly all contracts BEFORE signing. NO contract should ever be signed in blank. Beware of the individual or firm that tries to exert pressure to secure an immediate signing of a contract.

(12) Secure all guarantees and service warranties *in writing*.

(13) Never sign completion certificates until the job has been finished.

Penn Introduces Oil Burner Control at Heating Show with Gold-Plated Model

STATUESQUE blonde "Goldie" girl at Penn Controls, Inc. booth tags National Oil Heat Exposition visitor with "I Saw Goldie" lapel card which bore simulated lipstick imprint.

NEW YORK CITY—A new line of oil burner controls, the Series 680 and 682 continuous and intermittent ignition stack controls, were unveiled by Penn Controls, Inc. at the 21st National Oil Heat Exposition held here recently.

Visitors at the Penn exhibit were given information on the new controls and automatically became eligible for attendance prizes which were given away daily.

The feature spot of the Penn display was a gold-plated model of the new stack switch, identified as "Goldie." Statuesque, blonde "Goldie" girls passed out information on the new controls and tagged visitors with lapel cards which bore a simulated lipstick imprint and the words, "I saw Goldie."

Features of the new oil burner controls include low voltage protection; extra ground terminal; automatic recycling with timed purge period (on intermittent ignition); extended timed-ignition period; enclosed safety and ignition timing mechanisms; heavy duty laminated relay core and armature; separate heat barrier between case and stack tube; fingertip control of air adjustment; and greater adaptability to both large and small stacks, the company said.

In addition to the new oil burner controls, Penn also exhibited a complete line of oil heating controls and year-round air conditioning controls.

Daily prizes for attendance at the Penn booth included a choice of a gold pen and pencil set, black and gold desk set, or an oil burner control set.

Award winners were Joseph Derman, Hillside, N. J.; H. R. Heiple, Westfield, N. J.; Gene Strickler, York, Pa.; and Geo. R. Bergold, Long Island, N. Y.

Utility Appliance Declares 6% Dividend

LOS ANGELES—Utility Appliance Corp. here recently declared a 6% stock dividend on common, payable Aug. 30 to holders of record July 30, Ben B. Breslow, president, and Harry A. Goldman, board chairman, jointly announced.

Having an unbroken dividend record since 1946, the company stated the reason for the dividend is the desire to conserve cash due to a large current expansion program.

Utility will erect a 150,000-sq. ft. factory in New Albany, Miss. to make gas and electric water heaters and heating equipment, it was noted.

Bank To Get Cooling

SWAINSBORO, Ga.—Central Bank of Swainsboro has begun construction of its new $150,000, air conditioned building at West Pine and North Green Sts.

Another FIRST October 1st!

On that date will be published—for the first time in the air conditioning, heating, and refrigeration industry—an "*Advanced Manufacturing Issue.*" It will carry the most comprehensive report on manufacturing plans and opportunities ever compiled about this industry in a single publication.

Improved production set-ups, new machines, better packaging and shipping methods, quality control, cost cutting ideas such as automation, etc.—information on these and many other topics vital to the manufacturer will be subject matter for the "*Advanced Manufacturing Issue.*"

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Caution: many of the people who will be reading about you, your company, and your products will be doing so for the first time. Don't neglect to reserve sufficient space to acquaint them well with you. And, despite the added readership, interest and influence of the "*Advanced Manufacturing Issue,*" space charges remain at the same low rate.

AIR CONDITIONING & REFRIGERATION

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DETROIT, 450 West Fort St., WOodward 2-0934, J. B. Sullivan.

Air Conditioned Big Top Becomes Temporary Supermarket

SHOPPING CARNIVAL—A rush delivery of 12 Carrier air conditioning units to the Grand Union Co., East Paterson, N. J., aided the food chain in opening a temporary marketing site only eight days after its regular store was destroyed by fire. Here one of the units is seen on a temporary mounting as customers shop in one of three "big tops" set up as an interim store.

INSTALLATION BEGINS — Carrier Corp. rushed air conditioning equipment to Grand Union's temporary tent supermarket within 24 hours after fire had destroyed the food chain's East Paterson, N. J. outlet. Here a workman uncrates one of the 12 air-cooled 7½-hp. units brought in answer to Grand Union's emergency call to Carrier.

Speedy Shipments, Installations Put Store Back In Business 8 Days After Fire

(Concluded from Page 1)

cated shelving. Huge trailers parked around the tents offered bargains to case lot purchasers of groceries and frozen foods.

Clowns, Barkers, Animals Lend Atmosphere

The three tents were connected by six canvas-covered passageways and offered 16 check-out points. Clowns and barkers hawked merchandise while live animals provided a circus atmosphere. These included an elephant, a lion cub, a kangaroo, a llama, monkeys, and a de-scented skunk.

Business Better Than Usual

Lansing P. Shield, Grand Union president, reported that sales on opening day were double those of a normal Tuesday. He predicted that the canvas supermarket will do more business in its expected eight-week stand than the permanent store would have done. At the end of that time, the regular store should be ready for operation again.

Though it normally takes from four to six weeks to set up and stock a supermarket, the canvas store was put up in five days. Both store employes and outsiders worked around the clock to get the job done.

3 Distributors Rush Equipment

To obtain the air conditioning, Grand Union placed an emergency call to Carrier Corp. right after the fire. In two hours after receipt of the call, arrangements were completed. In another 22, equipment to provide 90 tons of cooling was on the job site. By opening day, it was all in place and operating at full efficiency.

After getting Grand Union's request for 12 7½-hp. packaged units, Carrier's New York office called upon its local distributor, Montgomery Engineering Co. of Hoboken, N. J., and enlisted the rush cooperation of two other distributors in the area, Carleton-Stuart of New York City, and H. Klein & Sons of Long Island, to help supply the self-contained "Weathermakers" needed.

Chartered trucks were dispatched to these organizations and the units were on hand the following afternoon.

In the meantime, plenums and front panels were rushed from Carrier's Syracuse headquarters to East Paterson, where they arrived less than 48 hours after Grand Union's first call to Carrier.

Montgomery Engineering provided technicians to direct the installation work, which required 36 hours. Air-cooled units were employed because of their ease of installation.

It was all in place and operating at full efficiency, providing about 90 tons of cooling, when the "big tops" opened for business.

Hoods Exhaust Toxic Fumes

1,000 Tons of Refrigeration To Serve National Carbon Research Laboratories

PARMA, Ohio—When the new research laboratories of the National Carbon Co., a Division of Union Carbide and Carbon Corp., are in full swing by mid-September here, they will have sufficient equipment to operate approximately 1,000 tons of refrigeration.

The boiler and compressor room occupies 84 by 88 ft. on the ground floor, with a ceiling height of 30 ft. running up through the first floor.

Major equipment consists of two natural-gas-fired boilers, with liquid "Pyrofax" standby, and two 400-ton refrigeration units. These units, together with a half dozen others in various areas, provide the 1,000 tons of refrigeration.

Chilled water from the refrigeration units is pumped through heat exchange coils in a number of air supply units located in various "penthouses" on the roof of the laboratories.

From those supplying the laboratory areas, 750 c.f.m. of electronic filtered air at 58° F. is delivered to each one of the 158, 12 by 24-ft. modules.

This air is warmed as needed by a thermostat-controlled reheat coil in each module and is then exhausted to the outdoors without any recirculation.

This makes it possible to use toxic chemicals in any module. In such cases, the air is exhausted through a hood rather than a ceiling fixture. In other air supply systems, which supply the cafeteria, auditorium, and office areas, a reasonable recirculation of conditioned air is provided.

Other air conditioning systems in the laboratories are used for specific purposes. One supplies the modules where electrical brush testing is conducted.

An entirely independent system, it is a 24-hour operation. Air is not only electronically filtered, but maintained at a constant humidity of 50% and vapor-filtered through a bed of activated carbon.

Another system supplies 24-hour constant temperature and constant humidity to a battery testing area.

Still another supplies around-the-clock low humidity to an area where infrared measuring devices are subject to deterioration at high moisture levels.

The new laboratories, which will be officially dedicated Sept. 18, contain approximately 175,000 sq. ft. of floor space and are located near the center of a 126-acre plot on Snow Rd. in suburban Cleveland.

Federal Refrigerator Names C.H. Stephens, Jr.

WAUKESHA, Wis.—Clyde H. Stephens, Jr., formerly sales manager of The Birn Co., has been appointed sales manager of the newly-created Bakery Equipment Div. of Federal Refrigerator Mfg. Co., it was announced recently by A. T. Mickle, sales manager.

Stephens has spent many years as equipment salesman to the bakery field. He had been with The Birn Co., one of the largest and oldest distributors of Federal equipment, for nearly 15 years.

Servel Divisions To Handle Own Design, Engineering Activities

EVANSVILLE, Ind.—Responsibility for the design and engineering of Servel's civilian products will be concentrated in the hands of divisional chief engineers, according to John H. Wall, executive vice president.

The chief engineers are Clyde E. Ploeger, commercial refrigeration division; Robert K. Eskew, all-year air conditioning division; and Richard E. Deaux, home appliance division. Deaux is acting in the temporary absence of Dr. R. S. Taylor, who is on sick leave.

Each of the chief engineers will report directly to the general manager of his respective division.

A. B. Kennison, who has been coordinator of research and product development, has resigned.

"This reorganization," Wall said, "is in line with the company's plan to establish completely autonomous product divisions, and is part of a continuing program to make Servel a lower-cost producer."

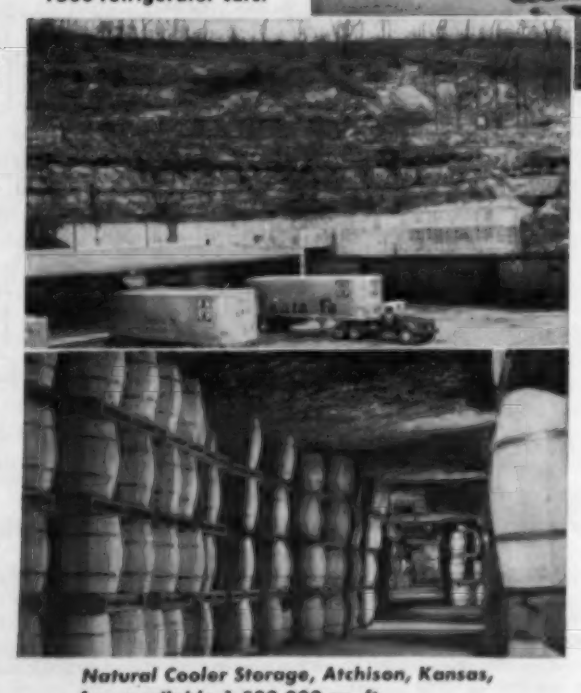
Jordon Names Hewetson

PHILADELPHIA—George B. Hewetson has been appointed assistant treasurer of Jordon Refrigerator Co., Inc., a subsidiary of United States Air Conditioning Corp.

Hewetson was formerly assistant comptroller at United States Air Conditioning Corp., prior to which he was in private practice as a certified public accountant in Minneapolis.

The Natural Storage, near Kansas City, has ultimate space of 10 million cu. ft.

Below: The Inland Storage, at Kansas City, holds contents of 1500 refrigerator cars.



Natural Cooler Storage, Atchison, Kansas, has available 1,500,000 sq. ft.

FRICK EQUIPMENT SERVES NATION'S LARGEST UNDERGROUND STRUCTURES

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Refrigeration Problems And Their Solution

By Paul Reed

For Service and Installation Engineers

'¾ Hp.' Room Unit Drawing 7½ Amps.

(Continued)

How is it possible to increase the capacity of the conditioner and still retain the 7½ ampere limit? There were three ways:

1. Increase the efficiency of the refrigerating system above the 8½ B.t.u. per watt. This is rather difficult, for modern refrigerating equipment is already being made to high standards of efficiency. It would be possible to increase the efficiencies of the units, but it would be expensive, and perhaps more than it is worth.

2. To raise the mechanical efficiency of the motor. This could be done to some extent, but again it would be expensive—perhaps more than it would be worth.

3. To raise the power factor of the motor. This can be done rather easily by using a capacitor-start capacitor-run motor, having a running capacitor in the main winding circuit. In this manner, the power factor can be raised from 80% to 90% or perhaps a little higher, and without much additional expense.

Let us see what this accomplishes:

7½ amps × 115 volts = 862 V.A.
862 V.A. − 200 V.A. (fans) = 662 V.A.
662 V.A. × 90% P.F. = 596 watts
596 w input × 80% ME = 477 watts (output)
477 w ÷ 746 w/hp. = .64 hp.
596 w × 8½ B.t.u./w = 5,066 B.t.u./hr.

INCREASED CAPACITY FROM HIGHER PF

Thus, just by increasing the power factor from 80% to 90%, by the use of an inexpensive running capacitor, it has been possible to raise the horsepower of the unit from .57 to .64 and to increase the capacity of the air conditioner from 4,505 to 5,066 B.t.u. per hour, an increase of 561 B.t.u. per hour, which is an increase of 11.2% in capacity.

Please note, however, that although the voltage remained at 115 volts and the current remained at 7½ amperes, the wattage increased from 530 watts to 596 watts when the power factor was raised from 80% to 90%. Thus the user has to pay for the additional 66 watts required to get the additional 561 B.t.u. per hour.

These high power factor units have been prominently featured this summer, for those users who simply want a window unit that they can plug into their ordinary wall receptacles on 115-volt No. 14 wire lighting circuits. The use of the running capacitor has been extended to other sizes of units, thus raising their cooling capacity per ampere.

Sometimes the 7½ amp units have been referred to as "light duty ¾-hp. units," but in order to get them up to a full ¾ hp., it would be necessary to raise the power factor to 93% and the motor efficiency to 91%, otherwise the horsepower of the motor-compressor cannot be raised to a full ¾ hp., and still stay within the 7½ ampere limit for a No. 14 two-wire lighting circuit.

NO. 12 WIRE 115-VOLT CIRCUITS

This does not mean that there is no longer any use for a unit larger than one drawing 7½ amps, even on 115 volts.

The National Electric Code permits a maximum of 10 amperes for a permanently wired appliance on 115 volts, provided that a separate circuit is run of two No. 12 wires. Even with an 80% power factor, this will permit a wattage of 760 for the motor-compressor only, and still on a basis of 8½ B.t.u./watt, the capacity of the unit can be 6,460 B.t.u. per hour. Also on the basis of an 80% mechanical efficiency of the motor, the horsepower of the unit is .81 hp.

By increasing the power factor of the unit to 93% by the use of a running capacitor, the horsepower could be increased to .95 hp. and the capacity of the unit to 7,500 B.t.u. per hour and still stay within the 10 amp limit on a two-wire No. 12, 115-volt circuit.

This would be the largest room air conditioning unit that could be used on 115 volts and it would have to have a special No. 12 circuit, and could not be plugged into an ordinary No. 14, 115-volt lighting circuit.

230-VOLT CIRCUITS (SINGLE PHASE)

In order to use a larger unit, it would be necessary to run a 230-volt circuit. In the older homes having only a two-wire 115 service, this would be rather expensive for it would require a new 230-volt service.

Many of the newer homes already have 115-230-volt three-wire services for electric ranges, so a new service would not be required, and a 230-volt circuit could be run from the 115-230-volt entrance, within, of course, the capacity of the service.

Anderson Heads Carrier Absorption Unit Work

SYRACUSE, N. Y.—Appointment of Dr. Philip P. Anderson as director of development in absorption refrigeration has been announced by Walter A. Grant, vice president of Carrier Corp.'s central Research & Development Div.

Dr. Anderson

He will be responsible for the absorption refrigeration program now under way.

He comes to Carrier after 20 years with Servel, Inc. where his most recent position was director of advanced engineering. During his last 15 years with Servel, Dr. Anderson has been associated with all phases of research and development of air conditioning for residences and small commercial establishments.

Evans Is President Of Canadian M-H

TORONTO, Ont., Can.—W. H. (Hank) Evans has been elected president of Minneapolis-Honeywell Regulator Co., Ltd. here, the firm's board of directors announced recently.

Evans, who has been general manager since 1941 and vice president and general manager since 1951, takes over the presidency from Harold W. Sweatt who becomes board chairman.

The history of Minneapolis-Honeywell, Ltd., dates back more than a quarter of a century to a predecessor company—The T. McDonald Co., Ltd. It has been carrying on manufacturing operations since 1932, and its Toronto factory makes a variety of precision equipment.

Boynton Is Copeland Chief Engineer

SIDNEY, Ohio—Copeland Refrigeration Corp. has named E. R. Boynton to the position of chief engineer, Oskar H. Buschmann, vice president in charge of engineering, announced.

E. R. Boynton

Boynton came to Copeland from Louisville, Ky. where he has been associated with General Electric Co. in advanced air conditioning compressor design.

He joined General Electric in 1933, completed that company's advanced engineering courses, and since has held executive engineering positions with General Electric at Fort Wayne, Ind., Erie, Pa., and Louisville.

Boynton will be engaged in product research and development and production engineering programs with Copeland.

Griffin Air Conditioning Opens In Morgan City

MORGAN CITY, La.—Griffin's Heating & Air Conditioning, 1669 Front St., recently held its grand opening.

Woodrow C. Griffin, who has had 11 years' experience in his line of work, is the owner. His firm offers sales, service, and installation.

RTA Elects Officers, Outlines Objectives

WASHINGTON, D. C.—Headed by L. L. Carter of Winston-Salem, N. C., president, officers of the Refrigeration Trade Association of America for the year ending June 30, 1957, were installed at the Ambassador hotel.

The new officers voted unanimously to continue efforts toward legal recognition of the trade of refrigeration and air conditioning, and to work closely with municipal and governmental agencies in establishing such recognition, according to R. H. Packett of Washington, executive secretary.

In addition to Carter and Packett, national officers are:

Sidney Bloom, Washington, first vice president; J. B. Broughton, Richmond, Va., second vice president; O. Manley Smith, Rural Hall, N. C., secretary; Leo Wolff, Baltimore, Md., treasurer; Arthur Jarrett, Washington, sergeant-at-arms; N. F. Crater, Sr., Winston-Salem, chaplain; W. J. Batrus, Washington, general counsel; and M. G. Horwitz, Silver Springs, Md., editor.

Directors serving 2-year terms are Crater; H. S. Dudley, Washington; A. C. Huber, Baltimore; and Henry Van Langen, Philadelphia. Serving one-year terms as directors are A. E. Bates, Raleigh, N. C.; George Brickle, Wilmington, N. C.; Horwitz; John Orner, Folsom, Pa.; and S. Pollock, Arlington, Va.

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Government Contracts

SYNOPSIS OF PROPOSED PROCUREMENT

ARMY

Purchasing Division, Utah General Depot, U. S. Army, Ogden, Utah.
INSTALLATION OF HEATING in Section 2, Building 243—Job—IFB QM-42-015-57-16B—Bid Opening 21 Aug. 56—Plans & Specs. available.

U. S. POST OFFICE DEPARTMENT

Chief of Procurement, Bureau of Facilities, Post Office Dept., Washington 25, D. C.
AIR CONDITIONING UNITS for windows—40—IFB 1416—Bid Opening 8-13-'56.

CONTRACTS AWARDED THROUGH AUG. 3, 1956

Officer In Charge of Construction, Naval Air Basic Training Command, U. S. Naval Air Station, Pensacola, Fla.
Air Conditioning of Certain Areas in Buildings 625A and 633, Naval Air Station, Pensacola, Fla. NOy-87001—Job—$67,962—E. M. Hall Construction Co., P.O. Box 5068, Pensacola, Fla.

Heating, Piping & Electrical Work, Building 709, Naval Air Station, Pensacola, Florida. NOy-87011—Job—$33,000—E. L. Walker, 3105 North Davis, Pensacola, Fla.

General Services Administration, Region 6, Business Service Center, 2306 E. Bannister Rd., Kansas City 14, Mo.
Air Conditioning 5th Floor, 410 North Broadway, St. Louis, Mo. (IFB CR 100)—Job—$10,696—Rupprecht Bros., Htg., Co., 8720 Jennings Rd., St. Louis 20, Mo.

Navy Dept., Bureau of Ships, Washington 25, D. C.
Chilled water cooling coil—49 ea.—Chilled water unit cooler (IFB-600-1903-56-S)—7 ea.—$26,145—McIntyre Engineering Co., Inc., 137 S. Linden Ave., South San Francisco, Calif.

Purchasing and Contracting Branch, Fort Campbell, Ky.
Air conditioning three chapels, Fort Campbell, Ky. (IFB NA-56-3)—Job—$31,515—Central Air Conditioning and Heating, Inc., 924 Eighth Ave. South, Nashville, Tenn.

Purchasing and Contracting Office, Bldg. 29, Fort McPherson, Ga.
Furnish Ice Cream Cabinets (DA-09-177-AIII-1801)—22 ea.—$29,480—Refrigeration Appliances, Inc., 270 Peachtree St., N.W., Atlanta, Ga.

G-E Names Packaged Unit Outlet In Denver

DENVER — Herman V. Nelson, representative of General Electric Co.'s Commercial & Industrial Air Conditioning Div., announced recently that Refrigeration Distributors Corp. here is the newly-franchised wholesale distributor of G-E packaged air conditioning equipment for the Denver trade area.

Refrigeration Distributors Corp. is a branch of the Salt Lake City company bearing the same name, which is a distributor for G-E and also represents other major manufacturers of refrigeration and air conditioning equipment and supplies with large stocks in the Denver branch. A branch of this company operates in Boise, Idaho under the same name.

Bryant Moves Air Dryer Sales and Engineering Staff to Indianapolis

INDIANAPOLIS — Bryant Div., Carrier Corp., one of the largest producers of adsorptive air drying equipment, has moved the sales and engineering staff of its Air Dryer Department from Cleveland to Indianapolis, according to Ronald N. Campbell, Bryant general manager.

Heading a staff of engineering and research specialists who have moved to Indianapolis is Thomas E. Gravenstreter.

Bryant has operated its Indianapolis plant at 21st and Montcalm Sts. since 1948 and headquarters operations were shifted here from Cleveland, along with much of the production equipment, in 1955.

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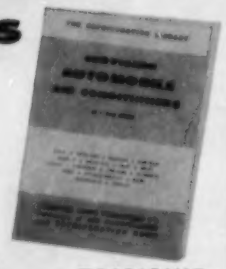

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Refrigerator, Freezer Sales by NEMA Firms Continue To Trail '55

NEW YORK CITY—Sales of home freezers and household refrigerators continued to run behind their 1955 pace during May, statistics issued by the National Electrical Manufacturers Association indicated recently.

May freezer sales by 18 firms reporting to NEMA were down 6% from last year, as were their sales for the first five months of the year. Their sales for May totaled 54,429 units and for the five months 278,826 units.

May refrigerator sales by 13 firms reached 327,874 units but were down 16% from a year ago. The 1,634,211 refrigerators sold in the first five months of the year were 12% behind the same period of 1955.

All but 1,419 of the freezers moved in May were sold in the United States, causing domestic sales to sag only 3%. The 606 freezers sold by these firms in Canada marked a 61% decline from last year.

The 813 freezers sold in other countries were 30% fewer than in 1955.

For the five months, domestic freezer sales were down 5%, while those to Canada dropped 39% and those to other countries fell 26%.

Reversing the trend, NEMA refrigerator manufacturers sold 20% more refrigerators in Canada in May than they did last year and 41% more than they did in the first five months of 1955.

Domestic refrigerator sales were down 16% for May and 14% for the six months. Sales to other foreign countries dropped 31% in May but only 4% during the five-months period.

Newly Created Ad Post At Norge Div. Goes To Robert J. Runge

CHICAGO—Robert J. Runge, director of advertising of Norge Div., Borg-Warner Corp., has been appointed to the newly-created position of director of advertising, publicity, and sales promotion.

R. J. Runge

R. C. Connell, vice president of sales, said that the appointment was effective immediately.

Runge, Norge advertising head since July 1954, now also will be in charge of sales promotion, dealer programs, and other merchandising functions, it was pointed out.

Before joining Norge, Runge was advertising and sales promotion manager of Thor Corp., Chicago, and prior to that, sales promotion manager of the plumbing and heating division of Crane Co., Chicago.

"Runge will direct a merchandising effort which includes a national advertising budget alone of nearly $4,000,000 annually," Connell further commented.

May Refrigerator Sales by NEMA Firms Hit 327,874

Summary for May and First Five Months, 1956
Complete Electric Household Refrigerators Only—Sales by Sizes—Units

MAY (13 Companies)

	Sizes	Domestic	Canadian	Foreign	Total
1.	3 cu. ft. (3.4 & under)	....	....	....	....
2.	4 cu. ft. (3.5 to 4.4)	1,626	1	14	1,641
3.	5 cu. ft. (4.5 to 5.4)	....	....	....	....
4.	6 cu. ft. (5.5 to 6.4)	472	....	25	497
5.	7 cu. ft. (6.5 to 7.4)	7,012	619	436	8,067
6.	8 cu. ft. (7.5 to 8.4)	42,345	303	7,054	49,702
7.	9 cu. ft. (8.5 to 9.4)	16,964	1,132	1,046	19,142
8.	10 cu. ft. (9.5 to 10.4)	60,968	3,545	4,637	69,150
9.	11 cu. ft. (10.5 to 11.4)	81,687	3,510	3,134	88,331
10.	12 cu. ft. (11.5 to 12.4)	64,628	607	1,429	66,664
11.	13 cu. ft. (12.5 & over)	23,350	547	783	24,680
12.	**Total**	**299,052**	**10,264**	**18,558**	**327,874**
	Refrigerators Having Two Exterior Doors (All Sizes Included In Above)	**46,263**	**973**	**1,074**	**48,310**

FIRST FIVE MONTHS (13-12 Companies)

	Sizes	Domestic	Canadian	Foreign	Total
1.	3 cu. ft. (3.4 & under)	....	....	....	....
2.	4 cu. ft. (3.5 to 4.4)	5,333	1	40	5,374
3.	5 cu. ft. (4.5 to 5.4)	....	....	....	....
4.	6 cu. ft. (5.5 to 6.4)	3,531	....	33	3,564
5.	7 cu. ft. (6.5 to 7.4)	34,200	3,586	4,679	42,465
6.	8 cu. ft. (7.5 to 8.4)	233,399	4,047	49,315	286,761
7.	9 cu. ft. (8.5 to 9.4)	74,417	6,006	5,729	86,152
8.	10 cu. ft. (9.5 to 10.4)	280,014	11,624	20,990	312,628
9.	11 cu. ft. (10.5 to 11.4)	309,503	7,525	14,560	331,588
10.	12 cu. ft. (11.5 to 12.4)	352,470	4,163	10,225	366,858
11.	13 cu. ft. (12.5 & over)	190,258	2,720	5,843	198,821
12.	**Total**	**1,483,125**	**39,672**	**111,414**	**1,634,211**
	Refrigerators Having Two Exterior Doors (All Sizes Included In Above)	**280,363**	**4,568**	**8,601**	**293,532**

Participating companies: Admiral Corp.; Crosley & Bendix Home Appliances Div., Avco Mfg. Corp.; Frigidaire Div., General Motors Corp.; General Electric Co.; Gibson Refrigerator Co.; Hotpoint Co., A Div. of General Electric Co.; Kelvinator Div., American Motors Corp.; Maytag Co., The (In 4-1-56); Norge Div., Borg-Warner Corp.; Philco Corp., Appliance Div.; Servel, Inc.; Westinghouse Electric Corp.; Whirlpool-Seeger Corp. (formerly Seeger Refrigerator Co.).

NEMA Reports May Freezer Sales at 54.429

Summary for May and First Five Month, 1956

Electric Farm and Home Freezers—Complete—Sales by Sizes—Units
Farm and home freezers complete with high and low side and cabinet, where 50% or more of the net cabinet capacity is designed for the freezing and/or storage of frozen foods.

MAY, 1956

	Sizes	Domestic	Canadian	Foreign	Total
1.	6 cu. ft. (6.4 & under)				
	Chest Models	*	*	*	*
	Upright Models	*	*	*	*
2.	7 & 8 cu. ft. (6.5 to 8.4)				
	Chest Models	*1,585	*26	*205	*1,816
	Upright Models	*139	*....	*4	*135
3.	9 & 10 cu. ft. (8.5 to 10.4)				
	Chest Models	*1,274	*26	*41	*1,341
	Upright Models	*	*	*	*
4.	11 & 12 cu. ft. (10.5 to 12.4)				
	Chest Models	*	*	*	*
	Upright Models	*5,475	*206	*63	*5,744
5.	13 & 14 cu. ft. (12.5 to 14.4)				
	Chest Models	*5,153	*112	*80	*5,345
	Upright Models	7,740	37	115	7,892
6.	15 cu. ft. (14.5 to 15.4)				
	Chest Models	6,717	51	110	6,878
	Upright Models	*	*	*	*
7.	16 & 17 cu. ft. (15.5 to 17.4)				
	Chest Models	5,382	42	10	5,434
	Upright Models	*3,089	*34	*17	*3,140
8.	18 & 19 cu. ft. (17.5 to 17.4)				
	Chest Models	2,605	2	20	2,627
	Upright Models	5,088	4	72	5,164
9.	20 & 21 cu. ft. (19.5 to 21.4)				
	Chest Models	4,617	58	59	4,734
	Upright Models	*	*	*	*
10.	22 cu. ft. (21.5 & over)				
	Chest Models	987	8	8	1,003
	Upright Models	*3,159	*....	*17	*3,176
	Total Chest Models	**28,320**	**325**	**533**	**29,178**
	Total Upright Models	**24,690**	**281**	**280**	**25,251**
	Total All Models	**53,010**	**606**	**813**	**54,429**

FIRST FIVE MONTH, 1956

	Sizes	Domestic	Canadian	Foreign	Total
1.	6 cu. ft. (6.4 & under)				
	Chest Models	*	*	*	*
	Upright Models	*	*	*	*
2.	7 & 8 cu. ft. (6.5 to 8.4)				
	Chest Models	*9,483	*150	*278	*9,911
	Upright Models	*1,878	*2	*77	*1,957
3.	9 & 10 cu. ft. (8.5 to 10.4)				
	Chest Models	5,677	238	133	6,048
	Upright Models	*	*	*	*
4.	11 & 12 cu. ft. (10.5 to 12.4)				
	Chest Models	*	*	*	*
	Upright Models	*28,090	*841	*587	*29,518
5.	13 & 14 cu. ft. (12.5 to 14.4)				
	Chest Models	*40,279	*599	*1,884	*42,762
	Upright Models	32,270	437	454	33,161
6.	15 cu. ft. (14.5 to 15.4)				
	Chest Models	30,931	1,187	582	32,700
	Upright Models	*	*	*	*
7.	16 & 17 cu. ft. (15.5 to 17.4)				
	Chest Models	20,049	42	83	20,174
	Upright Models	*24,109	*110	*65	*24,284
8.	18 & 19 cu. ft. (17.5 to 17.4)				
	Chest Models	14,872	101	152	15,125
	Upright Models	21,076	79	163	21,318
9.	20 & 21 cu. ft. (19.5 to 21.4)				
	Chest Models	24,378	918	124	25,420
	Upright Models	*	*	*	*
10.	22 cu. ft. (21.5 & over)				
	Chest Models	3,641	52	33	3,726
	Upright Models	*12,698	*15	*23	*12,721
	Total Chest Models	**149,310**	**3,287**	**3,269**	**155,866**
	Total Upright Models	**120,116**	**1,474**	**1,369**	**122,959**
	Total All Models	**269,426**	**4,761**	**4,638**	**278,825**

*Indicates data has been combined in other size categories.

Participating companies Admiral Corp.; Ben-Hur Mfg. Co.; Carrier Corp.; Crosley & Bendix Home Appliances Div., Avco Mfg. Corp.; Frigidaire Div., General Motors Corp.; General Electric Co.; Gibson Refrigerator Co.; Hotpoint Co., Div. of General Electric Co.; Kelvinator Div., American Motors Corp.; Maytag Co., The; Norge Div., Borg-Warner Corp.; Philco Corp., Appliance Div.; Revco, Inc.; Sub-Zero Freezer Co., Inc.; Victor Products Corp.; Westinghouse Electric Corp.; Whirlpool-Seeger Corp.; Wilson Refrigeration, Inc.; Quicfrez, Inc. (out 3-1-56); Servel, Inc. (out 3-1-56).

(Data supplied by National Electrical Mfrs. Assn.)

For more information about products advertised on this page use Information Center, page 26.

Price Rises--

(Concluded from Page 1, Col. 2)

is attributed to the fact that it is the "end of the season" for such equipment. However, it is considered more than likely that 1957 models of such equipment to be introduced this fall will carry higher prices (note Typhoon announcement reported on page 1 of this issue).

With steel prices definitely going up an average of $8.50 per ton, and predictions made that aluminum prices may jump 1½ cents a pound to the highest price in 30 years, it seemed improbable that manufacturers using quantities of these metals could hold the price line.

Even the price of copper, which took a big dip in July, was continuing to edge up again, with some producers predicting that it might settle down at around 40 cents a pound for a while.

Typhoon Prices--

(Concluded from Page 1, Col. 2)

steel costs, but also to rising costs in aluminum and other components.

"We have absorbed these mounting costs when possible, and will do so whenever we can," Mooney said.

"At the Typhoon national sales meeting scheduled for Monday, Aug. 13 at the Statler hotel in New York City, all Typhoon district managers were presented with the firm's new prices.

Hodapp Named--

(Concluded from Page 1, Col. 5)

university and has broad experience in air conditioning and refrigeration.

Early this year Bohn purchased the Betz Corp. of Hammond, Ind., manufacturer of products for the refrigeration and air conditioning industry. A month later Bohn bought a new plant at Danville, Ill. and began moving the new Betz Div. to larger quarters at Danville.

Aylward also announced Fred L. Bratt, a sales representative in the Michigan area since 1951, has been promoted to sales manager, Fabricated Products.

Ranco 9-Mo. Earnings Reported at $1,903,058

COLUMBUS, Ohio—Net earnings of Ranco Inc. in the nine months ended June 30 were $1,903,058 after provision for Federal income taxes, equal to $1.90 per share on the 1,000,000 shares of common stock outstanding, A. M. Hoover, president reported.

This compared with $1,964,715, or $1.96 per share, in the like period a year ago.

Sales for the nine months this year were $20,452,096 compared with $18,374,240 a year ago. Hoover said the fiscal year ending Sept. 30 will be the biggest volume year in the company's 43-year history.

Net earnings for the June quarter this year were $489,072, or 49 cents per share, compared with $801,885, or 80 cents per share, a year ago. Sales for the June quarter were $6,390,553 against $7,000,100 in the like quarter of 1955.

Minneapolis Firm In Larger Quarters

MINNEAPOLIS — To keep pace with expanding business, Refrigeration & Industrial Supply Co., Inc., parts wholesaler here, has just occupied a new addition to its building in downtown Minneapolis which gives it 50% more space.

"With the new addition we now have more than 10,000 sq. ft. of floor area," explains Frank Pond, head of the firm.

By putting an addition on the west side of the company's building at 328 S. 9th St. "we solved the main problem of providing more needed warehouse space and relieved the crowded office situation," Pond says, "and we still have some parking space for customers."

The addition is 25 ft. by 90 ft., consisting of ground floor and full basement. All of the basement and two thirds of the first floor of the addition is devoted to warehousing.

Offices in the new section are air conditioned, being tied into the existing system serving the original building.

Robertshaw-Fulton Gets Bergen Valve Rights

MILFORD, Conn.—Agreements have been reached giving Robertshaw-Fulton Controls Co. the right to manufacture and sell control devices developed by Bergen Research Engineering Corp., of Teterboro, N. J., it was announced by Anthony D. Rapuano, a vice president.

It is contemplated that these valves will be manufactured and sold by the Bridgeport Thermostat Div. here, of which Rapuano is the manager.

The contract also includes rights to future developments of the New Jersey company for shut-off and flow-regulating valves, pressure switches, and other hydraulically and pneumatically-controlled devices.

"The Bergen Research organization has developed a method of valve construction called the 'captive seal' principle, which makes possible extremely lightweight and compact valves that can operate under high pressure," Rapuano said. "Control elements of this type are in great demand for aircraft."

Buensod-Stacey's Kreuttner Tells Of Air Conditioning Progress on TV

NEW YORK CITY — J. W. Kreuttner, vice president of Buensod-Stacey, Inc., maker of air conditioning apparatus, recently discussed current progress and future trends in the industry during an interview on WABD-TV, the Dumont network's "Cavalcade of Progress" program.

The program included filmed shots of the company's factory at Charlotte, N. C., where Buensod-Stacey's dual-duct air conditioning equipment is produced, as well as a filmed "tour" of representative Buensod installations throughout the country.

These included the Field building in Chicago, the City-County building in Detroit, Liberty Life Insurance Co. building in Greenville, S. C.; Newark's American Insurance building, and offices served by the Buensod-Stacey dual-duct system in Rockefeller Center.

Kreuttner was interviewed by Conrad Nagel.

In discussing the dual-duct system, Kreuttner predicted that it would continue to be widely adopted by architects and engineers as they became aware of its greater flexibility and simplicity. He pointed out that the system eliminates the need for a second set of conduits with steam for heating and cooling a building.

Two recent developments in Buensod-Stacey systems, Kreuttner added, are "modular treatment" of window installations which permit variations in length and width of the unit as installed. He also cited the recently perfected "automatic volume controllers" which are now standard equipment in every B-S unit.

Air Conditioning Divisions Boost Cory Sales 221% In First 6 Months of 1956

CHICAGO — J. W. Alsdorf, president of Cory Corp. reported increased sales and earnings for Cory and its subsidiaries for the six-month period ended June 30, 1956.

Sales for the first six-month period of 1956 were $28,048,187 as compared to $8,735,085 for the first six-month period of 1955. This represented an increase in sales of $19,313,102, or approximately 221%.

Alsdorf commented that the principal reasons for the increases in sales and earnings were increased sales and manufacturing activities of its recently acquired division, Mitchell Mfg. Co., producer of central system and room air conditioners, as well as the substantial increase in volume at its Fresh'nd-Aire Co. Div., also manufacturing air conditioners and other air treatment appliances.

Income before provision for Federal and Canadian income taxes for the first six months of 1956 amounted to $1,966,270 as compared to $623,711 for the similar six-month period in 1955, or an increase of $1,342,559.

The net income increased after provision for Federal and Canadian income taxes for the first six months of 1956 to $962,544, or $1.49 per share, compared to 1955 first six-month net income of $298,954, or 46 cents a share. This represented an increase over the 1955 first six-month figures of $663,590, or $1.03 per share.

From the net income for the six months the company appropriated $200,000 to increase the reserve for contingent liabilities of Mitchell Mfg. Co. and subsidiary arising prior to the date of acquisition of that company, and accordingly the increase in earned surplus for the six months amounts to $762,544.

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In the 1957 Air Conditioning & Refrigeration Directory your selling message will reach 15,000 buyers throughout the industry who keep the Directory at their finger tips throughout the year. It gives them the information they must have to make intelligent buying decisions when they are in the market to buy. It gives them information about you, your company, and your product. Your listing is free.*

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Advertising forms close October 1st, 1956. Publication date: November 26, 1956. And an added plus feature—early distribution—at the Heating and Air Conditioning Exposition, Chicago, February 25 through March 1, 1957, at the beginning of the big 1957 air conditioning year.

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DETROIT, 450 West Fort St., WOodward 2-0924, J. B. Sullivan.

For more information about products advertised on this page use Information Center, page 26.

AIR CONDITIONING & REFRIGERATION NEWS

REPRINTS

The following articles have appeared recently in Air Conditioning & Refrigeration News, and are now available in reprint form. Supply of some reprints is limited. The order coupon below can also be used to obtain "selected" reprints not listed by giving title, page, and issue date.

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A comprehensive study on year 'round residential air conditioning—seven sections including, why people buy it, market conditions, how to sell it, estimating costs for various types of installation, FHA requirements, plus much more valuable information. 9" x 12" in size, finely printed and profusely illustrated.

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A discussion by T. N. Schierioh, service technical manager of General Motors' Delco Products Div., on servicing refrigeration and air conditioning motors.

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Everyone concerned with air conditioning should read the above books and keep them handy for reference purposes. Order your copies now.

PAMPHLET FORM

5) Water Shortage Cited as Aiding Trend to Air-Cooled Residential Air Conditioning
6) News Survey Shows Trends In Residential Air Conditioning
7) Psychological Study Shows Hidden Benefits of Home Conditioning
8) How Ceiling Diffusers Can Be Used In Residential Systems
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11) Detroit Air Conditioning Sales at New High
12) Survey Shows Equipment In Food Stores
13) Survey Points Up Replacement Market for Restaurant Refrigeration Equipment
14) New Minneapolis Survey Shows Home Installations 270% Higher Than '54
15) Air Conditioning, Commercial Refrigeration Shipments 1949-1953 from Figures Collected by U. S. Bureau of the Census
16) Minneapolis Residential Air Conditioning In 1954
17) Memphis Residential Air Conditioning, 1954
18) Residential Air Conditioning In Wichita
19) Residential Air Conditioning In Wilmington, 1954
20) Residential Air Conditioning In Atlanta, 1954
21) Residential Air Conditioning In '54 In Ft. Worth
22) Residential Air Conditioning In Cincinnati, 1954
23) Detroit Commercial Refrigeration Sales
24) New Wichita Survey Shows Residential Air Conditioning Soars
25) Fort Worth Survey Reveals New High In Home Air Conditioning Installations
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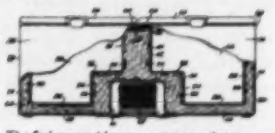
PATENTS

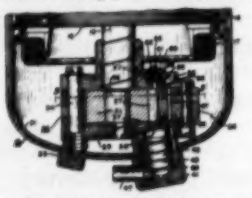
Week of March 20 (Concluded)

2,738,656. PLURAL COMPARTMENT REFRIGERATING APPARATUS. Lawrence A. Philipp, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich.



1. Refrigerating apparatus comprising, a pair of box-like liners having end walls with lower oppositely directed offsets and the liners being in opposed spaced relationship, said offsets providing a space for a machinery compartment, a refrigerant condensing unit in said machinery compartment, refrigerant evaporator means on said liners operatively connected to said condensing element, a casing enclosing both of said liners, said liners having their outer end walls and side walls spaced from corresponding end and side walls of said casing, insulation between said corresponding end and side walls of said liners and casing to decrease seepage of heat from the ambient to the cabinet liners, said liners being spaced apart such that the distance between the opposed offset end walls above the offsets is substantially twice that of the distance between the corresponding end and side walls of said liner and casing to prevent any appreciable exchange of heat between said liners, insulation between the opposed end walls of said liners above the offsets forming a partition between and common to said compartments, and a pair of laterally positioned hinged lids forming the top walls respectively of said compartments and resting on the upper edge of said common partition.

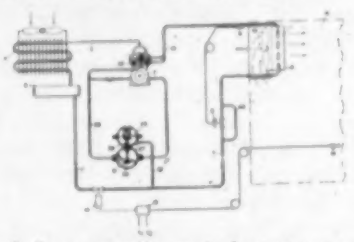
2,738,657. RELIEF VALVE FOR ROTARY COMPRESSOR. James W. Jacobs, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.



1. A refrigerating system comprising, an evaporator, a condenser, casing means forming a lubricant separating and storage chamber, a motor and a compressor driven thereby within said chamber, said compressor having a cylinder, a superheat removing coil located outside said chamber, a refrigerant inlet for said cylinder, a discharge valve for said cylinder, means for conveying compressed refrigerant from said discharge valve out of said chamber and into said coil, a pressure relief valve for said cylinder, means preventing liquid from said pressure relief valve from entering said chamber and for directing the liquid out of said casing means in a path separate from said compressed refrigerant conveying means and closed off from said chamber around said compressed refrigerant discharge valve directly into said coil, an outlet from said coil thereafter discharging fluid partially cooled therein into said lubricant separating and storage chamber, an outlet from said chamber through which the compressed refrigerant is discharged into said condenser, and fluid flow connections between said condenser, said evaporator and said compressor cylinder refrigerant inlet.

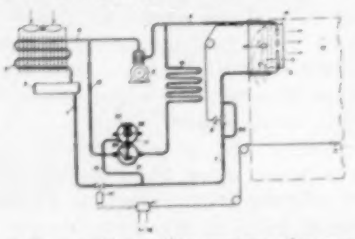
Week of March 27

2,739,450. REFRIGERATION SYSTEM PROVIDED WITH COMPRESSOR UNLOADING MECHANISM. Roger S. Breck, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



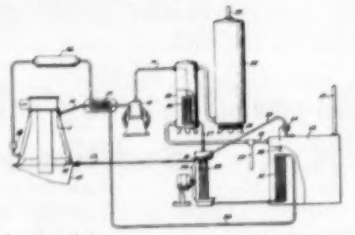
6. In a capacity control arrangement for a reciprocating compressor employed in a refrigeration system, the combination of power elements to unload the cylinders of the compressor, said power elements being actuated by oil pressure, a first valve responsive to a change in pressure in the liquid line of the refrigeration system to vary oil pressure imposed on said power elements, a second valve in said liquid line between the condenser and the expansion means of the refrigeration system and a control adapted to actuate said second valve in response to a predetermined change in temperature in a compartment being cooled.

2,739,451. REFRIGERATION SYSTEM PROVIDED WITH COMPRESSOR UNLOADING MECHANISM. Roger S. Breck, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



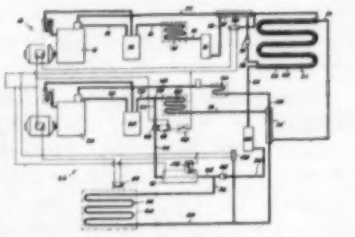
1. In a refrigeration system, the combination of a compressor, a condenser connected to the compressor, an evaporator placed in a compartment to be cooled, a liquid line connecting the condenser with the evaporator, a discharge line connecting the compressor and the condenser, a suction line connecting the evaporator and the compressor, expansion means in the liquid line, means for by-passing gaseous refrigerant about the compressor while continuing operation of the compressor, said means being responsive to pressure in said liquid line, a control member placed in the liquid line and means for actuating the control member in response to the temperature of the compartment being cooled.

2,739,452. REFRIGERATING SYSTEM. Adiel Y. Dodge, Rockford, Ill. Application Oct. 4, 1954, Serial No. 460,078. 8 Claims. (Cl. 62—3.)



1. A refrigerating system comprising a refrigerant compressor, a refrigerant evaporator connected to the inlet of the compressor, a tank connected in a water supply system, a heating coil in the tank connected to the outlet of the compressor to receive hot refrigerant therefrom and to heat water in the tank, an air cooled heat exchanger connected to the coil to receive refrigerant therefrom, a refrigerant conducting connection from the heat exchanger to the evaporator and means to collect condensate from the evaporator and discharge collected condensate on to the heat exchanger.

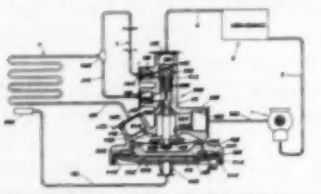
2,739,453. EXPLOSION-PROOF LOW-HIGH TEMPERATURE SYSTEM. Robert C. Webber, Indianapolis, Ind.



1. In a high-low temperature system, a first compressor, a first oil separator, conduit means connecting said first compressor to said first oil separator, a first condenser, a first receiver, conduit means connecting said first oil separator to said first receiver through said first condenser, a first expansion valve, a first evaporator comprising an outer fluid coil and an inner fluid coil threaded through said first coil, conduit means connecting said first receiver to one of said coils through said first expansion valve, conduit means connecting said one coil to said first compressor, a second compressor, a second oil separator, conduit means connecting said second compressor to said second oil separator, a second condenser, conduit means connected to said second oil separator and dividing into two branches, one of said branches connecting to the other of said coils of said first evaporator through said second condenser, a second receiver, a second expansion valve, conduit means connecting said other coil to said second expansion valve through said second receiver, valve means, heater means, the other of said branches connecting to said heater means through said valve means, a second evaporator, conduit means connecting said heater means and said second expansion valve to said second evaporator, cooler means, and conduit means connecting with said second evaporator to said second compressor through said cooler means.

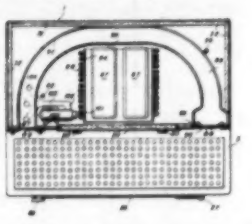
2,739,454. REFRIGERATION SYSTEM AND CONTROL VALVE THEREFOR. Thomas E. Noakes, Detroit, Michigan, assignor to Detroit Control Corp., Detroit, Mich.

1. In a refrigeration system, a compressor, a condenser, an expansion device, and an evaporator, connected in a series conduit circuit for compression, condensation, flow, and expansion of a volatile refrigerant, said circuit including a continually open conduit directly connecting the outlet of said compressor to said condenser so that all of the refrigerant discharged by



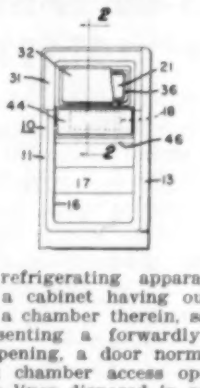
said compressor is at all times supplied directly to said condenser, a by-pass conduit connected to pass compressed refrigerant around said expansion device; valve means comprising a first valve connected to and controlling flow through said by-pass conduit, said first valve having a normally closed position directing flow of refrigerant to said expansion device, a second valve normally open and connected in and controlling flow through the return connection from said evaporator to said compressor, mechanical means operatively interconnecting said valves for conjoint operation so that opening of said first valve will effect closure of said second valve, means to actuate said valve means to said position in which said first valve is opened and said second valve is closed to direct refrigerant flow in a circuit by-passing said expansion device, and said valve means including means providing a restriction in the return connection from said evaporator to said compressor when in said actuated position.

2,739,455. APPARATUS FOR CHILLING AND DISPENSING BEER GLASSES. Edward D. Idzi, Baltimore, Md., assignor to Ogle R. Singleton, Washington, D. C. Original application Sept. 15, 1947, Serial No. 774,138, now Patent No. 2,628,009, dated Feb. 10, 1953. Divided and this application Feb. 9, 1953, Serial No. 335,958.



1. In an apparatus for chilling and dispensing beer glasses, the combination of a casing having a pair of openings, each having a rectilinear bottom edge, refrigerating means and an insulation lining; a horizontal shelf projecting from said casing substantially midway between the top and bottom of said casing, the upper surface of said shelf and the bottom edges of said openings lying in a common plane; a track so disposed in said casing as to extend from one of said openings to the other opening, and having a horizontal, smooth floor, the upper surface of which lies in said plane; and sets of double doors for closing said openings, respectively, said doors being biased to closed position, the doors of one of said sets opening inwardly of said casing to afford passage of the beer glasses from the shelf to said track, and the doors of the other set opening outwardly of said casing to afford passage of the beer glasses from the track to the shelf.

2,739,456. TWO TEMPERATURE REFRIGERATOR. Orson V. Saunders, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.



1. A refrigerating apparatus comprising, a cabinet having outer walls forming a chamber therein, said chamber presenting a forwardly directed access opening, a door normally closing said chamber access opening, an open top liner disposed in said chamber and spaced from said cabinet outer walls, insulating material in the space between said cabinet outer walls and said liner, the open top of said liner being located a substantial distance below the top wall of said cabinet and forming an unfrozen food storage compartment in the lower portion of said cabinet, a can-like member disposed in said chamber above the open top of said liner forming a frozen food storage compartment in the upper portion of said cabinet, said can-like member being spaced from said cabinet outer walls, insulating material filling the space between said cabinet outer walls and said can-like member, said frozen food compartment having an access opening facing said chamber door, a closure member within said chamber

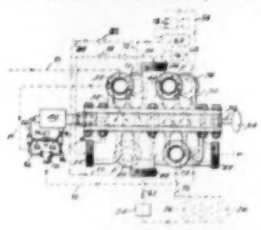
(Continued on next page)

PATENTS

(Continued)

normally closing the access opening of said frozen food compartment, a partition spaced below the bottom wall of said can-like member, insulating material filling the space between the bottom wall of said can-like member and said partition, a first means for refrigerating said frozen food storage compartment, a second means for refrigerating said unfrozen food storage compartment, a pan-like element substantially coextensive with said partion and spaced therebelow, said pan-like element forming the top wall of said unfrozen food compartment and a lower wall of a horizontal flue beneath said partition, said second refrigerating means being located in said unfrozen food storage compartment and exposed to air therein for cooling and causing circulation thereof, said flue being provided with an air inlet opening and an air outlet opening spaced therefrom, at least some of the air circulating within said unfrozen food storage compartment flowing through said flue along and in contact with said partition, the front edge of said can-like member and the front edge of said partition being secured to and spaced from one another by a non-metallic breaker strip, said breaker strip having a lip projecting forwardly of said can-like member and forming a trough beneath said frozen food compartment access opening closure member for receiving condensate water therefrom, and said trough being provided with an opening for draining condensate water received therein into said pan-like element.

2,739,458. HEAT PUMP SYSTEM. Alwin B. Newton, Jackson, Mich., assignor to Acme Industries, Inc.

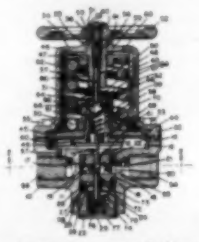


1. A heat pump system comprising in combination a source of liquid, a waste liquid discharge, a refrigerated liquid chiller, a refrigerant condenser, a refrigerant compressor, a heat exchanger, conduit means defining a first open circuit for said liquid between said source and said discharge through said chiller, conduit means defining a second open circuit for said liquid between said source and said discharge in heat exchange relation with said condenser, conduit means defining a first closed circuit between said heat exchanger and said chiller, conduit means defining a second closed circuit between said heat exchanger and said condenser, valve structure common to all of said circuits to selectively control the same, means for circulating liquid through said heat exchanger, and heat exchanger being disposed in conduit means common to said first and second closed circuits.

2,739,461. REFRIGERATED WATER COOLER. James A. Canter, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.

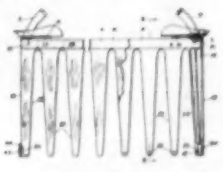
1. A water cooling and dispensing apparatus comprising in combination, a cabinet having a water supply inlet thereto, means in said cabinet for cooling water entering same through said inlet, a drain catch basin on said cabinet, a nozzle for discharging a stream of water cooled by said cooling means upwardly over and into said basin, a valve for controlling the flow of water from said nozzle, means for actuating said valve, said valve actuating means including a manually movable device on said cabinet and a step-like device projecting outwardly from a side wall of said cabinet at a height thereon intermediate the bottom thereof and said nozzle, said step-like device being adapted to support a child thereon in a position permitting the child to drink from a stream of water flowing from said nozzle, said step-like device being movable in response to the weight of a child stepping thereon, means connecting each of said devices with said water valve actuating means whereby movement of either of said devices independently of the other causes operation of said valve actuating means to open said valve, and a hand hold on a side wall of said cabinet intermediate said step-like device and the top of said catch basin for assisting the child in stepping upwardly upon said elevated step-like device and for maintaining himself or herself balanced thereon while drinking from the stream of water.

2,739,611. COMBINATION REGULATING AND RELIEF VALVES. Richard T. Cornelius, Minneapolis, Minn.



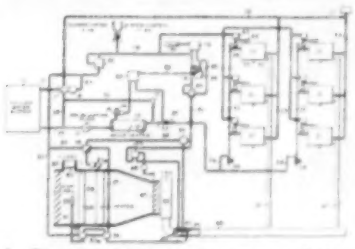
1. In a pressure regulating valve, a body having an inlet chamber, an inlet communicating therewith, an outlet chamber and an outlet communicating therewith and a passageway extending between said inlet chamber and said outlet chamber, a valve seat encircling said passageway at the intersection of said passageway with said inlet chamber and facing said inlet chamber, a floating valve member disposed in said inlet chamber and adapted to seat against said valve seat, a bore in said body opposite said valve seat and in communication with the exterior, a piston slidable in said bore and disconnected from said valve member, said piston being adapted to contact said valve member, resilient means carried by said body and urging said piston into contact with said valve member to effect seating of said valve member against said seat, said bore being of substantially the same cross sectional area as the area of the outer confines of the contacting portion of said valve seat said resilient means exerting a force on said piston greater than the maximum force exerted by the fluid pressure on the valve member to maintain said piston in contact with said valve member and pressure responsive means subject to the pressure in said outlet chamber and engageable with said valve member to unseat the same in correspondence with variations in pressure in said outlet chamber to regulate the pressure therein.

2,739,667. FILTER FRAME. Robert A. Palmore, Louisville, Ky., assignor to American Air Filter Co., Inc., Louisville, Ky.



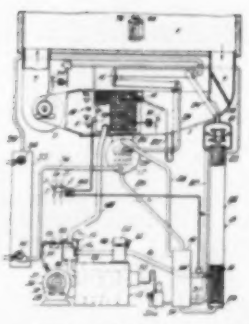
1. A filter frame member comprising: open end channel members providing upwardly open longitudinal channels; a plurality of separate fingers in said channels; cooperating means extending lengthwise of the channels and interlocking said respective fingers and channels and permitting sliding movement of the fingers longitudinally of said channels for removal of said fingers at the ends of said channels; blocking members removably interlocked in said channels adjacent the ends thereof; and removable means for locking said blocking members in said channels.

2,739,792. AIR CONDITIONING SYSTEMS USING HEAT EXCHANGERS LOCAL TO THE CONDITIONED SPACE. Robert D. Blum, York, Pa.



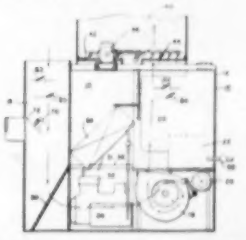
1. In a multiple-room air conditioning system, the combination of a plurality of conditioning units associated with respective rooms, each unit including means enclosing a supply air plenum having a discharge into the associated room, an air supply connection leading to the plenum, and surface heat-exchange means arranged to exchange heat with air as the latter flows through the plenum between said supply connection and said discharge; a radiant panel heat exchanger external to said plenum and exposed to the room; a duct system for supplying air under pressure to said supply connections; means for supplying air under pressure to said duct system; and means for circulating selectively either heating or cooling liquid in a continuous path leading through at least a portion of the first named surface heat exchanger, and then in series through said radiant panel heat exchanger, whereby when cooling liquid is circulated it is warmed in the first named heat exchange means to a temperature such that the surface of the radiant panel heat exchanger is above the dew point temperature of the room air.

2,739,793. BURNER CONTROL FOR AIR CONDITIONING SYSTEM. Harry C. Shagaloff, Evansville, Ind., assignor to Servel, Inc., New York, N. Y.



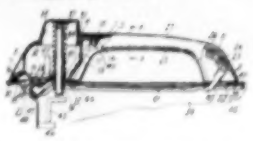
In a heat operated air conditioning apparatus having means for either heating or cooling the air in an enclosure, a burner for heating said apparatus at different heating rates on heating and cooling operations, respectively, means for adjusting the apparatus and burner to shift from either a heating or cooling operation to the other, a thermostatic control means responsive to a condition affected by said apparatus to start operation of the burner, and timing means connected in the thermostatic control means and initiated by the means for adjusting the apparatus to shift from one conditioning operation to another to delay starting of the burner by the thermostatic control means for a predetermined period of time when shifting from one conditioning operation to another.

2,739,794. AIR HEATING AND COOLING APPARATUS. Charles D. Graham, Oakwood, Ohio, assignor to General Motors Corp., Dayton, Ohio.



In a self-contained air conditioning unit, a main housing, a vertical partition defining with the walls of said housing a heating chamber and a cooling chamber, said vertical partition having an opening adjacent its lower end whereby said heating and cooling chambers are in open communication, said heating and cooling chambers each having top outlets and damper means adjacent each of said top outlets for individually controlling the flow of air through each of said outlets, a refrigerant evaporator in said cooling chamber, a heating unit in said heating chamber, refrigerant liquefying means comprising a compressor and a liquid cooled condenser disposed below said evaporator, means connecting said refrigerant liquefying means and said evaporator for supplying refrigerant to said evaporator, partition means separating said refrigerant liquefying means and said evaporator and forming with the walls of said housing a compartment for said refrigerant liquefying means, an opening in said housing providing an air inlet to said compartment and a blower disposed directly below said heating unit and between said compartment and heating chamber to transfer air therebetween whereby the air to be conditioned is passed in thermal exchange relationship with said refrigerant liquefying means prior to its introduction into said blower.

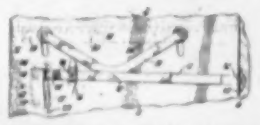
2,739,831. PUSH BUTTON DOOR HANDLES ADAPTED FOR USE ON THE DOORS OF AUTOMOBILES, REFRIGERATORS, AND THE LIKE. Gerald V. Jakeway, Grand Rapids, Mich., assignor to Keeler Brass Co., Grand Rapids, Mich.



8. In a door handle, a chambered body member having top and side walls, and including a central grip portion and inwardly offset front and rear portions, the top wall having a push button opening adjacent its front end, a bracket disposed in the front portion between the side walls and fixedly secured to the body member and having a base portion disposed in spaced relation to the top wall and having an opening therethrough aligned with the push button opening, a tubular push button stem guide disposed in said opening in said base member and fixedly secured therein in alignment with said push button opening, a push button disposed in said push button opening and provided with a latch operating stem reciprocable in said guide, and a coil spring disposed between the base portion and the push button and embracing the stem guide and acting to bias the push button outwardly of the push button opening, said stem guide fittingly receiving and laterally supporting the stem.

2,739,864. VERTICALLY ADJUSTABLE REFRIGERATOR SHELF SUPPORT. Orson V. Saunders, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application July 14, 1954, Serial No. 443,232. 3 Claims. (Cl. 312—306.)

1. In a cabinet provided with a plurality of walls forming a compartment therein, a shelf within said compartment, adjustable means mounting said shelf in said compartment, said adjustable means being movable relative to said cabinet for raising and/or lowering the shelf within said compartment to vary its height therein, said adjustable means including a shelf support, an arm pivotally mounted on said cabinet and a substantially V-shaped link interposed between said arm and said shelf support, said means also including spaced apart stationary



guides for each end of the legs of said link, said ends of the legs of said link being connected to said shelf support at two spaced apart points therealong, the base of said V-shaped link being connected to said arm for moving said ends of the legs of the link along said guides, said guides being arcuate in shape to compensate for movement of said link by said pivotally mounted arm and eliminate binding of said adjustable means, and said guides holding said ends of the legs of said V-shaped link in a horizontal plane with respect to one another for preventing tilting of the shelf within said compartment.

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications $10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS WANTED

REFRIGERATION ENGINEER — 25 years' experience on ice cream, cup, bottle venders and ice cube machine; air conditioning, experimental and laboratory work. 22 years with last company. Prefer engineer field work in the Midwest. Now located in Traverse City, Mich. BOX A5598, Air Conditioning & Refrigeration News.

CERTIFIED AIR conditioning and refrigeration technician—plus 15 years' actual experience in all phases—desires permanent position with manufacturer or progressive company in field servicing & installations. Conducted own sales and service business commercial and industrial etc. Can assume responsibility and knows what it takes to work for profit. Now residing in New England, wish to relocate to warmer climate preferably California. Age 41. Will furnish complete verifications on request. Can start immediately upon getting together. BOX A5601, Air Conditioning & Refrigeration News.

AIR CONDITIONING engineer experienced in teaching, development, design, installations and service of air conditioning controls and systems. Wide experience in installation and service of residential year-round air conditioning systems. Desire position where original applications of engineering knowledge and experience is essential. BOX A5602, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

REFRIGERATION WHOLESALE parts salesman: Position now open in El Paso, Texas. Minimum of three years experience. Excellent salary and bonus. M & M REFRIGERATION SUPPLY, 2505 Texas Street, El Paso, Texas.

MANUFACTURERS' REPRESENTATIVES in all territories for a new air conditioning program just being introduced. If you have the ability to handle a real profit making activity, write giving territory, lines carried and air conditioning experience. M. A. Myers, RAYMOND ROSEN EQUIPMENT CO., 51st & Parkside Ave., Philadelphia 31, Pa.

FACTORY REPRESENTATIVE: Large national manufacturer of prefabricated sectional walk-in coolers has several choice territories available in central and eastern states. Write giving all qualifications and other lines handled. BOX A5599, Air Conditioning & Refrigeration News.

SALES ENGINEERS—Two for Cleveland and Cincinnati, Ohio location by major manufacturer of air conditioning equipment 2 to 125 h.p. Will promote product with users and specifying agencies and sell through franchised outlets. Must have some experience in air conditioning field. Degree helpful. Limited travel required. Salary commensurate with age and ability. Expenses, incentive plus usual benefits. BOX A5600, Air Conditioning & Refrigeration News.

FACTORY REPRESENTATIVE: National manufacturer of all types environmental equipment, including low temperature, humidity and altitude chambers, has open territory in the New England states. Write giving all qualifications and other lines handled. BOX A5605, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

ARCTICAIRE AIR conditioning equipment 2, 3 and 5 ton packaged water chillers, air or water cooled. Direct expansion air conditioning systems 2, 3 and 5 ton, air or water cooled, self contained and remote types. Write for literature and prices. ARCCO, MANUFACTURERS AGENTS, INC., Merchandise Mart Bldg., 2201 Grand Avenue, Kansas City, Missouri.

SERVICEMEN'S THERMOMETERS: Mercury filled with pocket cases, range -60° to plus 160° F. Mfg. by Taylor and G. M. Price $10.80 per dozen postpaid. H. L. BOGGESS & SONS, Liberty, Missouri, P. O. Box 137.

BRAND NEW blower coils 50% below my cost price. All well-known brands. 2 Model ¼RI $25.50 each; 1 Model 190R $55.65; 1 Model 60R $40.50; 1 Model CPC18 $45.00; 1 Model 151BB $37.50; 1 Model WM20 $43.85; 4 Models UD7 $26.25 each. Contact L. M. DANNEMILLER, 631 No. Howard Street, Akron 10, Ohio.

NEW SELF contained Kesco automatic condensate water disposal pumps for air conditioners ice cube bins; at your local wholesaler; available in 10 and 20 foot heads.
NEW YORK, Abco Refrigeration, 1615 Second Ave.
MT. VERNON, Eastern Supply, 521 East Third Street
SYRACUSE, Gould-Farmer Co., 1020 W. Genesee Street.
WHITE PLAINS, County Seat, 111 Central Ave.
JAMAICA, N. Y., Wholesale Distributors, 148-24 Liberty Ave.
NEWARK, N. J., Tesco Distributors 78 Boston Street
DAYTON, OHIO, W. H. Kiefaber Co., Refrigeration Dept.
SACRAMENTO, CALIF., Associated Refrigeration, 1717 Eye Street
SEATTLE, WASH., Refrigerative Supply, 204 W. Republican
DETROIT 4, MICH., Lee Equipment Co., 4721 Joy Road
HIGHLAND PARK, MICH., J. M. Oberc, Inc., 55 Oakman Blvd.
BRIDGEPORT, Conn., Parsons Bros., Inc., 2137 East Washington Ave.
Distributors write to KESCO PRODUCTS CORP., Springfield Gardens 13, N. Y. for sample pump and literature.

BUSINESS OPPORTUNITIES

FOR SALE: Long established refrigeration and household appliance sales and service located in growing Indiana city. Exclusive franchise from well-known old line manufacturer of refrigeration and major appliances. Owners wish to retire. BOX A5602, Air Conditioning & Refrigeration News.

OWNER'S ILLNESS necessitates immediate sale of a well established and profitable commercial refrigeration and air conditioning business in the Washington, D. C. area. Will consider also full-time partner. Excellent dealer and distributor franchises. Financing arrangements flexible. BOX A5604, Air Conditioning & Refrigeration News.

MISCELLANEOUS

ATTENTION SERVICEMEN: Send for free circulars and bulletins on refrigeration parts and equipment. Real money saving values: WALTER W. STARR; 2833 Lincoln Avenue, Chicago 13, Illinois.

CHIEF REFRIGERATION ENGINEER

Unusual opportunity for a well grounded man who wants and can take responsibilities.

SALARY OPEN

Location New York City—Our organization knows of this ad. Write in confidence to Box 1000, Realservice Advtg. Agency, 116 West 14 St., N.Y.C.

Airtemp To Boost--

(Concluded from Page 1, Col. 4)

equipment has been completed and machines are now being set in place.

At the conclusion of the installation work, Airtemp will start manufacturing three new air conditioner compressors: one for the company's car air conditioner and two hermetically-sealed compressors for home air conditioning units.

100-Ft.-Long Line

Featuring latest developments in machining automation, the line will be 100 ft. in length. Chief components will be a preparatory machine and transfer machine which together will perform more than 80 operations on compressor crankcase castings.

Crankcases, when fully machined, will move to a new compressor assembly section which Airtemp is also adding.

Part of the over-all expansion step, the company is likewise installing a pair of new automatic coil making machines which will turn out car air conditioner cooling coils.

To Make Own Auto Conditioner Compressor

R. J. Schuman, Airtemp vice president in charge of manufacturing, in announcing the expansion move, stated:

"Of immediate and long range importance is the fact that we will start producing our own car air conditioner compressor. With the manufacture of the entire cooler under one roof we will be in a much better position to increase our unit output as sales warrant.

"We started building the air conditioner used in all Chrysler-make cars in 1953. Since then we have had to up our production figure each year. The next several years should certainly call for similar and no doubt larger increases."

Since 1950 in a series of expansion moves the Airtemp plant and production facilities have been doubled in size. During the same period the number of air conditioning and heating products made by the company has grown in approximately the same proportion.

G-E Magnetic Door--

(Concluded from Page 1, Col. 3)

devices so they can be opened from the inside.

The legislation is aimed at making it impossible for children to be trapped in abandoned refrigerators. During the past 10 years abandoned refrigerators have been responsible for the deaths of at least 115 children.

"The magnetic safety door," Timmerman said was incorporated in all our 1956 refrigerators. The door has no latch or other mechanical fastener.

"It is held closed by the action of a permanent Alnico magnet and the pressure required to open it from the inside is so small that it can be easily opened by the instinctive action of a child pushing or kicking.

"In the interest of national child safety we are glad to make our magnetic door available on a license basis to other refrigerator manufacturers."

Los Angeles FHA Rulings--

(Concluded from Page 1, Col. 3)

shall show clearly the location of all air conditioning equipment not located within the dwelling.

The second ruling requires that the first owner occupant shall receive, if he requests it within 30 days after occupying the property, a performance guarantee covering the air conditioning equipment in writing from the air conditioning controlling contractor.

In reference to the placement of remote air conditioning equipment, the FHA office told its construction inspectors and examiners:

"While the basis for this requirement is primarily architectural, it must be borne in mind that the placement and screening of the equipment must provide for the mechanical needs of the equipment such as:

"1. An unobstructed passage for outside air to the fan of the condenser.

"2. An unobstructed passage for exhaust air from the condenser to the outside.

"3. Adequate access to the equipment and controls for cleaning and servicing.

"4. Adequate isolation of sound and vibration from the structure of the dwelling. This latter may involve isolation of the foundation from the main structure, use of suitable vibration-absorbing materials under the equipment, and other measures.

"It must be borne in mind, also, that the equipment must be so located that it does not encroach upon required yards, natural light and air, access, or circulation. Equipment located in a narrow side yard will rarely be acceptable because of its effect upon adjoining property. The preferred location is in the rear yard separated from all bedrooms."

PERFORMANCE GUARANTEE

FHA said that the performance guarantee, properly dated and executed, shall read as follows:

"When operated according to instructions the air conditioning and heating equipment installed in this property is hereby guaranteed to produce the inside design conditions in the following rooms, when the outside is at design conditions:

_____ _____

This guarantee shall cover one complete air conditioning season and one complete heating season.

Also we guarantee to install, without charge, any parts which are furnished under the Manufacturer's Warranty.

Design conditions, Air Conditioning:

Outside, Dry Bulb .....°F
Outside, Wet Bulb .....°F
Inside, Dry Bulb .....°F
Inside, Relative Humidity ...%

Design conditions, Heating:
Outside, Dry Bulb .....°F
Inside .....70°F

Signed:

.....
Air Conditioning
Controlling Contractor"

FHA said the above test must be posted in a permanent place near the equipment at the time of final inspection.

It observed:

1. This requirement affects in no way the contractual relationship between the general contractor and the sub-contractor.

2. Upon signing the above guarantee the sub-contractor then becomes obligated to perform according to his statements contained thereon.

3. This does not relieve the general contractor of any prior duties or obligations.

THE NEW UNARCO DYNA-PAC

...FEATURING BOTH ECONOMY AND EFFICIENT LONG LIFE

- 2-, 3-, 5-ton capacities in water-cooled or air-cooled models
- For residential and commercial installations
- Selective manual humidity control
- Built-in plenum
- 4-way adjustable top air discharge on free blow models

The all-new UNARCO Dyna-Pac meets the challenge of better air conditioning at lower cost. What's more, it was designed with the installing contractor in mind. All Dyna-Pac units are pre-wired and pre-piped for easy, low-cost installation.

There is economy in both the low initial cost and minimum maintenance required. There is also economy of space with the compactly designed DYNA-PAC. Duct models can be attached to existing warm air heating systems to provide year 'round conditioning.

Write Dept. AC-105 for full information, including catalog and prices.

The Royal-Aire—by UNARCO—representing the ultimate in packaged air conditioning equipment. Available in 5 models, 3 through 15 h.p.

UNARCO AIR CONDITIONING PRODUCTS
National-U.S. Radiator Corporation
JOHNSTOWN, PENNSYLVANIA

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